ORDER NO. AD9004096A2

Service Manual

Cassette Deck
RS-B765

Dolby NR-Equipped
Stereo Cassette Deck

*
DOLBY B·C NR HX PRO

∗ HX Pro headroom extension originated by Bang Olufsen and manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY", the double-D symbol, and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

RS-B555 MECHANISM SERIES (AR350)

Color

(K)...Black Type

Area

Country Code	Area	Color
(E)	Continental Europe.	(K)
(EB)	Great Britain.	
(EG)	F.R. Germany and Italy	

Please file and use this supplement manual together with the service manual for Model No. RS-B755, Order No. AD8908260C5.

CHANGE

■ CHANGE IN REPLACEMENT PARTS LIST

Note:
1. Mentioned in this parts list are only those different from Model No. RS-B755 (E, EB, EG) all other parts are the same as for RS-B755 (E, EB, EG).
2. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components use only manufacturer's specified parts.
3. Parenthesized indications in "remarks" columns specify the area.
   Parts without these indications can be used for all areas.

Ref. No.	Change of Parts No.		Part Name & Description	Remarks
	RS-B755 →	RS-B765		
CAPACITORS				
C9, C10	ECEA0JPX471B	**ECA0JPXS471B**	E. CAPACITOR, 6.3V, 470μF	
C19, C20	ECEA1HKR33B	**ECA1HPXSR33B**	E. CAPACITOR, 50V, 0.33μF	
C21, C22	ECEA1CPX100B	**ECA1CPXS100B**	E. CAPACITOR, 16V, 10μF	
C35, C36	ECEA1HPX4R7B	**ECA1HPXS4R7B**	E. CAPACITOR, 50V, 4.7μF	
C43, C44	ECEA1CPX100B	**ECA1CPXS100B**	E. CAPACITOR, 16V, 10μF	
C45, C46	ECEA1HPX4R7B	**ECA1HPXS4R7B**	E. CAPACITOR, 25V, 4.7μF	
C47, C48	ECEA1HPS010	**ECA1HPXS010B**	E. CAPACITOR, 50V, 1μF	
C49, C50	ECEA1CPX100B	**ECA1CPXS100B**	E. CAPACITOR, 16V, 10μF	
C403, C404	ECEA1CPX100B	**ECA1CPXS100B**	E. CAPACITOR, 16V, 10μF	

Technics

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

Ref. No.	Change of Parts No.		Part Name & Description	Remarks
	RS-B755 →	RS-B765		
CAPACITORS				
C411, C412	ECEA1CPX100B	**ECA1CPXS100B**	E. CAPACITOR, 16V, 10μF	
C425, C426	ECEA1CPX100B	**ECA1CPXS100B**	E. CAPACITOR, 16V, 10μF	
C439, C440	ECEA1CPX100B	**ECA1CPXS100B**	E. CAPACITOR, 16V, 10μF	
C453, C454	ECEA1CPX100B	**ECA1CPXS100B**	E. CAPACITOR, 16V, 10μF	
C461, C462	ECEA1HPX4R7B	**ECA1HPXS4R7B**	E. CAPACITOR, 50V, 4.7μF	
C602, C603	ECEA1EU222E	**ECA1EPT222E**	E. CAPACITOR, 25V, 2200μF	⚠
C610, C611	ECEA1AU102B	**ECA1AAX102B**	E. CAPACITOR, 10V, 1000μF	
C618 ~ C621	ECEA1AU102B	**ECA1AAX102B**	E. CAPACITOR, 10V, 1000μF	
C628, C629	ECEA1HPS010	**ECA1HPXS010B**	E. CAPACITOR, 50V, 1μF	
IC				
IC3	MC14066BCP	**MN4066B**	IC, TAPE SOURCE SELECTOR	
CABINET AND CHASSIS				
8	RGR0024–H	**RGR0024–P**	REAR PANEL	(E)
8	RGR0024–J	**RGR0024–Q**	REAR PANEL	(EB)
8	RGR0024–0	**RGR0024–R**	REAR PANEL	(EG)
18	RMK0026–1	**RMK0026–2**	CHASSIS	
20	RFKGSB755E–K	**RFKGSB765E–K**	FRONT PANEL ASS'Y	
26	RGU0133	**RGU0133A**	BUTTON, OPERATION	
29	RME0049	**RME0049–1**	SPRING	
42	RKU0009	**RKU0009–1**	BOTTOM BOARD	
63	RMA0157	**RMA0157–1**	DAMPER ANGLE	
MECHANISM PARTS LIST				
109	REX0092	**REX0092–1**	LEAD WIRE BLOCK	
149	REX0093	**REX0093–2**	LEAD WIRE BLOCK	
PACKING MATERIAL				
P1	RPG0301	**RPG0525**	CARTON BOX	
P2	RPN0178	————	PAD, FRONT/BACK	Deletion
P3	SPS5185	**SPSD152**	PAD, ACCESSORIES	
P5	————	**RPN0366A**	PAD (A)	Addition
P6	————	**RPN0366B**	PAD (B)	Addition
P7	————	**RPN0366C**	PAD (C)	Addition
P8	————	**RPN0366D**	PAD (D)	Addition
ACCESSORIES				
A1	RQT0226–D	**RQT0545–D**	INSTRUCTION MANUAL	(EG)
A1	RQT0227–B	**RQT0544–B**	INSTRUCTION MANUAL	(EB)
A1	RFKSSB755E	**RFKSSB765E–K**	INSTRUCTION MANUAL	(E)
A4	————	**RQA0013**	WARRANTY CARD	Addition
A5	————	**RQCB0169**	SERVICENTER LIST	Addition

Printed in Japan
K900408200YY/TN

CONTENTS

	Page
SAFETY PRECAUTION	2
ACCESSORIES	2
FRONT PANEL CONTROLS AND FUNCTIONS	3, 4
CONNECTIONS	5
RECORDING WITH HIGH TONE QUALITY	5~7
DISASSEMBLY INSTRUCTIONS	8~12
MEASUREMENT AND ADJUSTMENT METHODES	13~15
TERMINAL FUNCTION OF IC'S	16, 17
BLOCK DIAGRAM	18, 19
INTERNAL CONNECTION OF FL	20
SCHEMATIC DIAGRAM	21~28
TROUBLESHOOTING OF DIRECT DRIVE MOTOR	28, 29
PRINTED CIRCUIT BOARDS	30~34
WIRING CONNECTION DIAGRAM	35
REPLACEMENT PARTS LIST	36~38
EXPLODED VIEWS	39~42
REPLACEMENT PARTS LIST	43
RESISTORS & CAPACITORS	44~46
TERMINAL GUIDE IC'S, TRANSISTORS AND DIODES	46
※TECHCNICAL INFORMATION	

※This technical information is located on pp 45-51 of the RS-B555 Service Manual (Order No. AD8907231C5). Therefore, refer to that Service Manual.

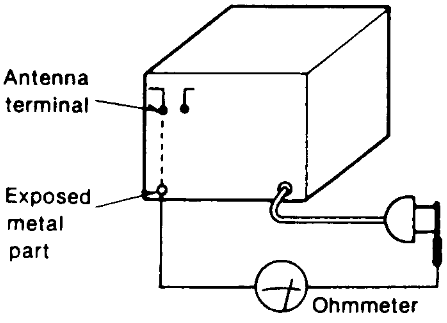
SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• INSULATION RESISTANCE TEST

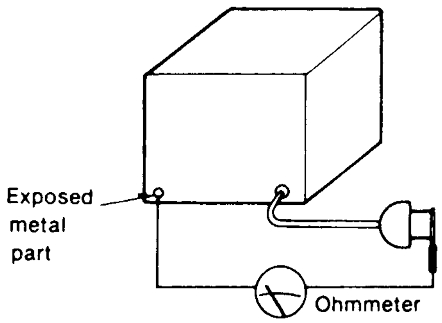
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = 3MΩ—5.2MΩ



(Fig. B)

Resistance = Approx ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

ACCESSORIES

- Stereo connection cables 2
  [SJP2249-3]
- AC power supply cord 1
  - SFDAC05E03: (E, E5, EG)
  - SJA172: (PC)
  - SJA172-1: (P)
  - SJA193-1: (EB)

ORDER NO. AD8908260C5
A2

Service Manual

Cassette Deck
RS-B755

Dolby NR-Equipped
Stereo Cassette Deck

DOLBY B·C NR HX PRO*

Color

(K)...Black Type

Area

Country Code	Area	Color
(P)	U.S.A.	(K)
(PC)	Canada.	
(E, E5)	Continental Europe.	
(EB)	Great Britain.	
(EG)	F.R. Germany and Italy	

* HX Pro headroom extension originated by Bang Olufsen and manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY", the double-D symbol, and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

MECHANISM SERIES: AR350

■ SPECIFICATIONS

■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads	
Record	Permalloy (Combination)
Playback	Permalloy (Combination)
Erasure	Double-gap ferrite
Motors	
Capstan drive	Quartz DD motor
Reel table drive	DC motor
Cassette holder open/close	DC motor
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Tape speed	4.8 cm/sec. (1⅞ ips)
Frequency response	
NORMAL	20 Hz~19 kHz 20 Hz~18 kHz (DIN)
CrO₂	20 Hz~20 kHz 20 Hz~19 kHz (DIN)
METAL	20 Hz~21 kHz 20 Hz~20 kHz (DIN)
S/N (signal level=max recording level, CrO₂ type tape)	
Dolby C NR on	74 dB (CCIR)
Dolby B NR on	66 dB (CCIR)
Dolby NR off	57 dB (A weighted)
Wow and flutter	0.05% (WRMS) ±0.14% (DIN)
Fast forward and rewind times	Approx. 90 seconds with C-60 cassette tape
Input sensitivity and impedance	
LINE	60 mV/47 kΩ
Output voltage and impedance	
LINE	400 mV/800Ω
HEADPHONES	125 mV/8Ω (8Ω~600Ω)

■ GENERAL

Power consumption	21 W
Power supply	
For U.S.A. and Canada	AC 120V, 60Hz
For Great Britain	AC 240V, 50/60Hz
For others	AC 220V, 50/60Hz
Dimensions (W×H×D)	430×135×290 mm (16¹⁵⁄₁₆"×5⅛"×11¹³⁄₃₂")
Weight	5.3 kg (11.7 lb.)

Note:
Specifications are subject to change without notice.
Weight and dimensions are approximate.

Technics

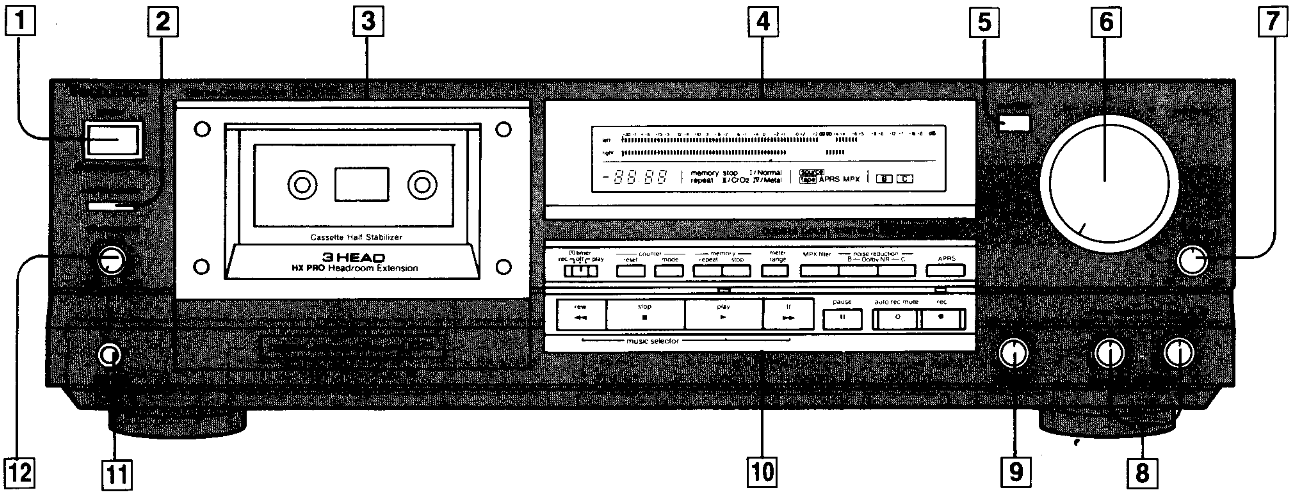
Matsushita Services Company
Division of Matsushita Electric
Corporation of America
50 Meadowland Parkway,
Secaucus, New Jersey 07094

Panasonic Sales Company,
Division of Matsushita Electric
of Puerto Rico, Inc.
San Gabriel Industrial Park
65th Infantry Ave. Km.9.5
Carolina, P.R. 00630

Matsushita Electric of Canada Limited
5770 Ambler Drive, Mississauga, Ontario,
L4W 2T3

Matsushita Electric Industrial
Co., Ltd.
Central P.O. Box 288,
Osaka 530-91, Japan

■ FRONT PANEL CONTROLS AND FUNCTIONS


1
2
3
4
5
6
7
8
9
10
11
12
Cassette Half Stabilizer
3 HEAD
HX PRO Headroom Extension
left
right
memory stop
repeat
I/Normal
II/CrO2 IV/Metal
source
tape
APRS MPX
B C
counter
reset
mode
memory
repeat
stop
meter
range
MPX filter
noise reduction
B — Dolby NR — C
APRS
rew
stop
play
ff
pause
auto rec mute
rec
music selector

1 Power "standby ⏻ /on" switch (power "standby ⏻ /on")
This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the "standby⏻" position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

2 Open/close button (▲ open/close)
This button can be used to open or close the cassette holder.

3 Cassette holder

4 Display section

5 Monitor switch (monitor)
In order to monitor the tape (check the recording condition), the sound on the tape (immediately after recording) and the sound of the sound source (the original sound, before recording) can be alternately selected by pressing this button. (The corresponding indicator will illuminate.)

6 Recording-level control (rec level)
This control can be used to regulate the recording level and the peak level.

7 Recording-balance control (balance)
This control can be used to balance the left and right sound levels during recording.

8 Recording-calibration adjustment controls (rec calibration)
The sensitivity differences (high or low recording levels) for each tape type can be corrected by using these controls.

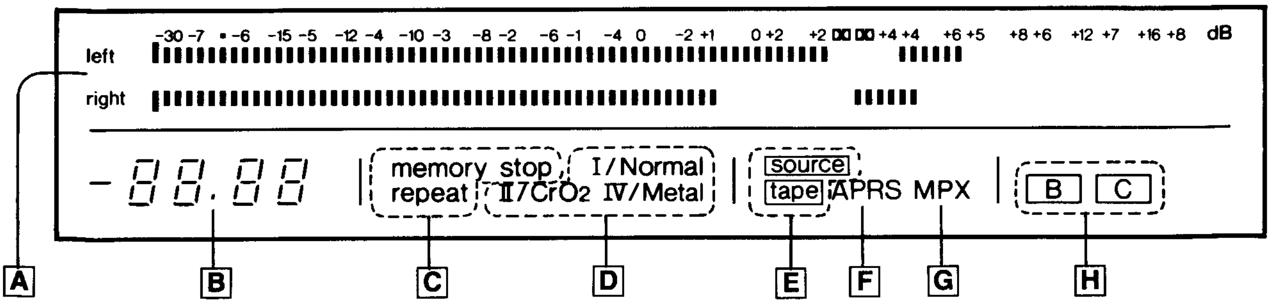
9 Bias-adjustment control (bias adjust)
The frequency response for each tape type can be equalized by using this control.

10 Operation section

11 Headphones jack (phones)

12 Headphones volume control (phones level)

[redacted]


-30 -7 ▪ -6 -15 -5 -12 -4 -10 -3 -8 -2 -6 -1 -4 0 -2 +1 0 +2 +2 +4 +4 +6 +5 +8 +6 +12 +7 +16 +8 dB
left
right
-88.88
memory stop
repeat
I/Normal
II/CrO2 IV/Metal
source
tape
APRS MPX
B C
A
B
C
D
E
F
G
H

A Input level meter
During playback, this meter indicates the level of the recorded sound.
During recording, it indicates the level being recorded, adjusted by the recording-level control.

B Tape/Linear counter
Indicates the amount of tape movement or elapsed time.

C Memory-mode indicators (memory repeat/stop)
Each indicator illuminates to show which of the memory mode was set by the memory-mode buttons.

D Tape-select indicators
The type of tape being used will be automatically detected and the indicator will illuminate.

E Monitor indicators (source/tape)

Each indicator illuminates to show which of the monitor was set by the monitor switch.

F APRS indicator (APRS)

Illuminates to indicate that the "APRS" is set to "on" in the recording stand-by mode.

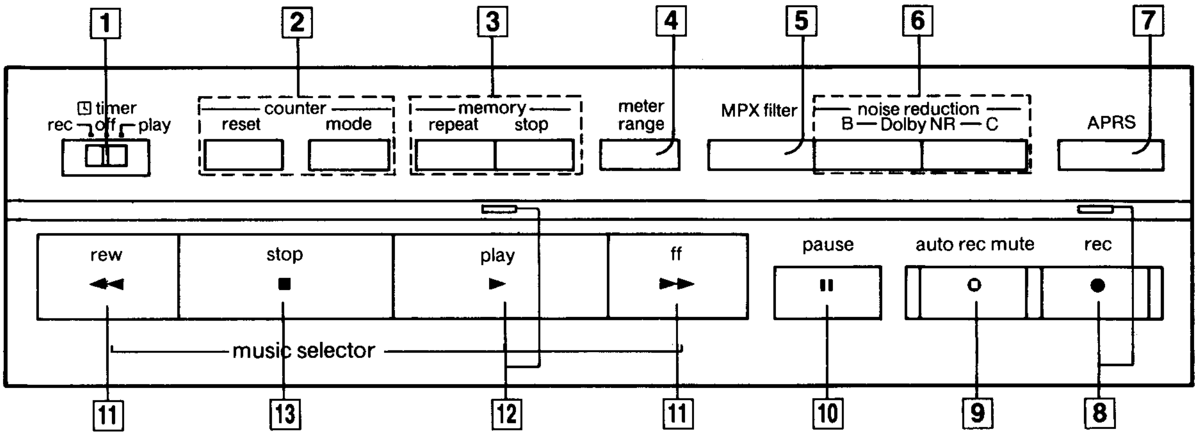
G Multiplex filter indicator (MPX)

Illuminates to indicate that the multiplex filter is set to "on".

H Dolby noise-reduction indicators (B, C)

Each indicator illuminates to show the type of Dolby noise-reduction system selected by pressing one of the Dolby noise-reduction buttons.

[illegible]



1 Timer switch (timer)

This switch is used to automatically begin a tape recording or tape playback at a certain time, selected by a timer (not included).

2 Counter buttons (counter reset/mode)

reset: This button can be used to reset the tape/linear counter indication to "000_"/"00.00".

mode: This button can be used to select the tape/linear counter indication.

3 Memory-mode buttons (memory repeat/stop)

repeat: This button can be used to set this unit to the "A-B repeat" mode.
(Refer to page 7.)

stop: This button can be used to rewind the tape to the preset "0000" point when the rewind (◀◀) button is pressed. (Refer to pages 7.)

4 Meter-range selector (meter range)

This selector can be used to select the meter-range display of the input level meter.

5 Multiplex filter switch (MPX filter)

This switch can be used during the recording of an FM stereo broadcast that employs Dolby noise reduction so as to prevent misoperation of the Dolby noise reduction.
(Refer to page 5.)

6 Dolby noise-reduction buttons (noise reduction)

These buttons are used to reduce the hissing noise heard from the tape. This unit is provided with both the B-type and C-type noise-reduction systems.

7 APRS button (APRS)

This button can be used to hold the peak level while monitoring the input sound. (Refer to page 6.)

8 Record button and indicator (rec/●)

This button can be used to change the tape deck to the recording stand-by mode.
This indicator illuminates to indicate that this tape deck is in the recording stand-by mode, or is recording.

9 Automatic-record-muting button (auto rec mute/○)

This button can be used to make a silent interval on the tape being recorded on tape deck.

10 Pause button (pause/❚❚)

This button can be used to temporarily stop the tape playback or recording of tape deck.

11 Rewind/fast-forward/search buttons (rew/◀◀, ff/▶▶)

These buttons can be used to fast forward or rewind the tape, or to easily search for the tune's beginning of the tape quickly.

12 Playback button and indicator (play/▶)

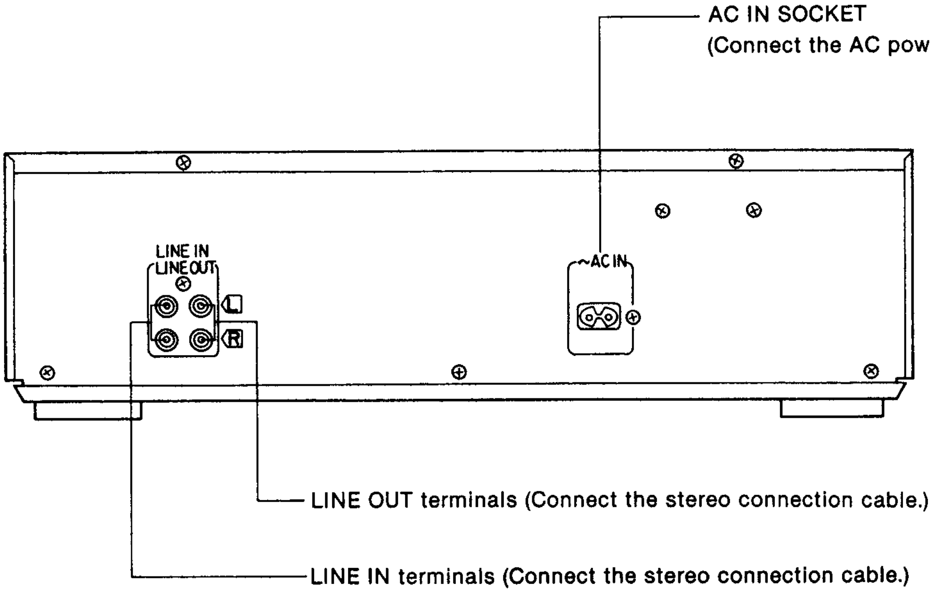
This button can be used to start the playback or recording of the cassette.
(The tape will then begin moving in the left-to-right direction.)

When this indicator illuminates steadily, it indicates that this tape deck is in the playback mode or the recording mode. When it flashes continually, this is an indication that this tape deck is in the pause mode or the recording stand-by mode.

13 Stop button (stop/■)

This button can be used to stop tape movement.

■ CONNECTIONS



AC IN SOCKET
(Connect the AC power supply cord.)

LINE OUT terminals (Connect the stereo connection cable.)

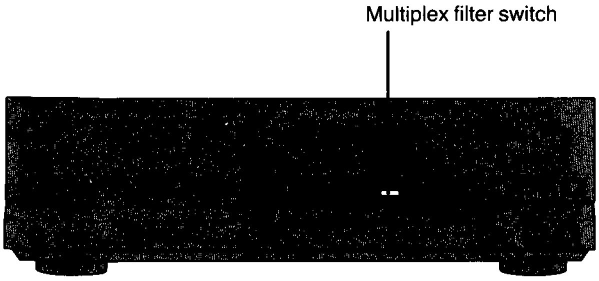
LINE IN terminals (Connect the stereo connection cable.)

■ RECORDING WITH HIGH TONE QUALITY

MPX filter

Because the pilot signals*, etc. included with FM stereo broadcast signals are subjected to Dolby noise-reduction processing in the same way as the music signals when an FM stereo broadcast is being recorded, there is apt to be deterioration of the tone quality, and the noise-reduction effect is reduced.

This unit, however, is provided with an MPX filter that filters out the 19 kHz frequency, which is the frequency of the pilot signal. Note that there is virtually no audible effect upon the tone quality as a result of the use of the MPX filter.



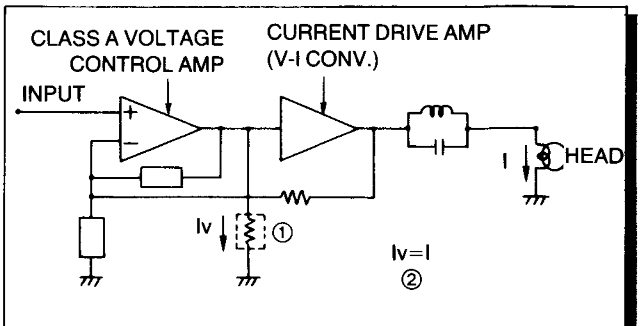
This switch can be used during the recording of an FM stereo broadcast that employs Dolby noise reduction so as to prevent misoperation of the Dolby noise reduction.
This switch, however, should be switched OFF when a sound source other than the FM broadcast is being recorded, such as, for example, a sound source that has a wide frequency range, such as a compact disc, etc.

***Pilot signal**
The pilot signal is a signal that is used to separate FM broadcast signals in stereo (left and right channels); this signal is generated on a frequency that is very close to the 19 kHz music band.

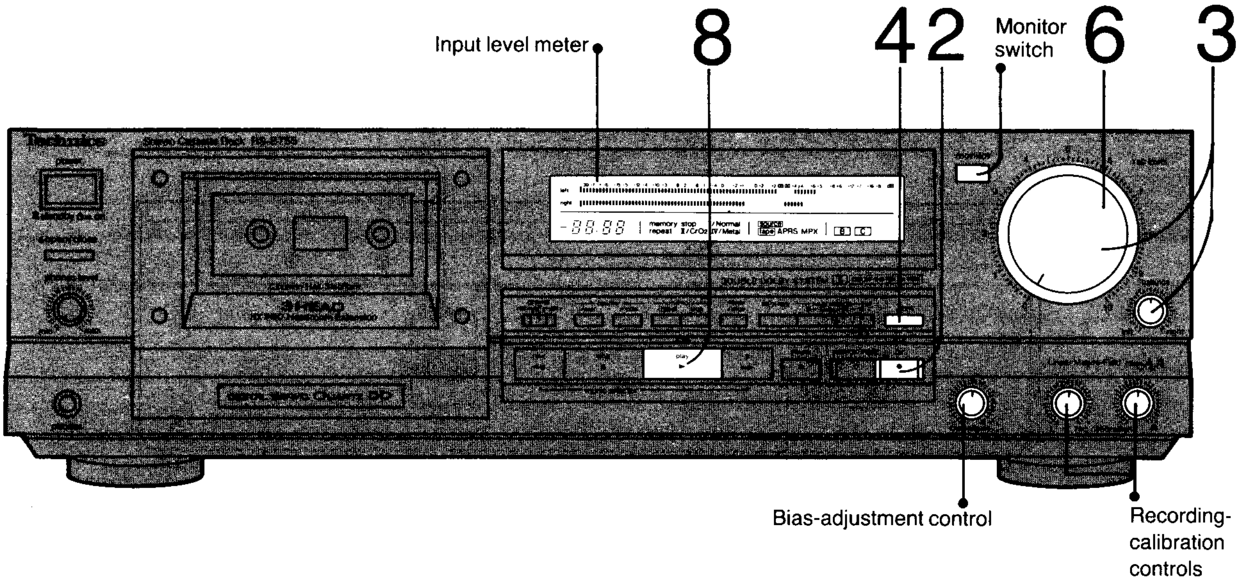
Linear Magne-Field class AA

The recording-equalizer amplifier is an amplifier for supplying (to the head) the current necessary for recording. Usually, loads such as the recording head and bias trap circuitry (circuitry for control of the bias current) would be applied to the output of this amplifier, with the result that complex changes of the current phase occur, causing distortion of the recording signal.

The recording-equalizer amplifier used in this unit, however, is a linear magne-field class AA amplifier that is a combination of class A voltage-control amplifier circuitry and current-drive amplifier circuitry. (See the figure below.) As a result, a current flow that is equivalent to the current flowing in the pure resistance of the current-drive amplifier can be supplied to the recording head. Consequently, a magnetic field that corresponds to the input signals is produced at the head and is recorded on the tape, which means that recorded sounds are faithful to the original sound source, without fluctuations of the current phase.



① Pure resistance
② Current flowing through the current-drive amplifier's pure resistance and current flowing through the recording head become equivalent.



APRS function

Because the dynamic range of cassette tape is narrower than the dynamic range of a digital source, the recording will be too noisy if the recording level setting is too low, and, conversely, the recorded sound will be distorted if the setting is too high.
It was for this reason that it has always been recommended that the signals to be recorded be first (before recording) input to the cassette deck and the recording level then be set while watching the level meter, but, for former conventional level meter equipped with the peak-hold function, it was necessary to re-adjust and input the signals again if the level setting was too high or too low.

This unit, however, is equipped with the **APRS: Advanced Precise Recording-level System**, which holds and displays the maximum peak of the input signal level, so that once the peak level of the source is held, there is no necessity to re-input the source signals, and the optimum recording level can be set.

- The APRS function can be used only during the recording-standby mode.

1 **Prepare for recording as described in steps 1 to 6 of the "Recording" section.**

2 rec

Press the record button.

(The recording indicator will illuminate and the playback indicator will flash continuously; the unit will be in the recording stand-by mode.)

3 rec level/balance

Set the recording-level control and the recording-balance control to the suitable position for the sound source.

4 APRS

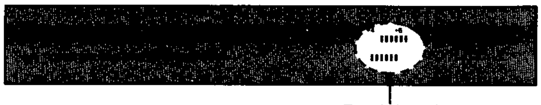
Press the APRS button.

(The APRS indicator will illuminate.)

5 **Play the sound source to be recorded, from beginning to end.**

[The peak level (the highest level of the input signal) of the sound source will be displayed and held on the input-level meter.]

Input level meter



Peak level

Note:
The range within which the peak level can be held is −8 dB to +16 dB. Note that the APRS indicator will flash continuously if the peak level of the sound source is input at a level that exceeds the maximum recording level (+16 dB).
If that happens, press the APRS button to cancel the APRS function, and then reset the recording level and set the APRS once again.

6 rec level

Using the recording-level control, adjust the peak level to the desired setting.

The peak level will move to the right when the recording-level control is turned to the right, and will move to the left when the recording-level control is turned to the left.

- The recording-balance control cannot be used to adjust the peak level.

7 **Begin playing the sound source from the beginning once again.**

8 play

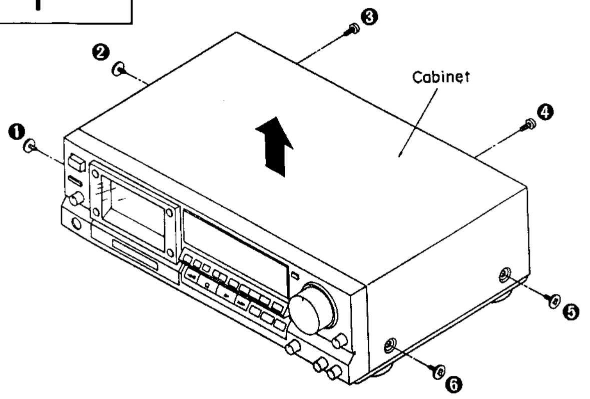
Press the playback button.

(The playback indicator will illuminate steadily, and the recording will begin.)
The APRS indicator will switch OFF, and the indication of the input-level meter will return to the ordinary peak-hold mode.

DISASSEMBLY INSTRUCTIONS

"ATTENTION SERVICER"
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

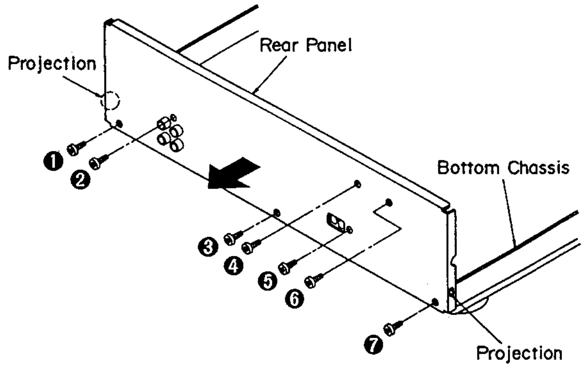
Ref. No. 1	Removal of the cabinet
Procedure 1	


❶
❷
❸
❹
❺
❻
Cabinet

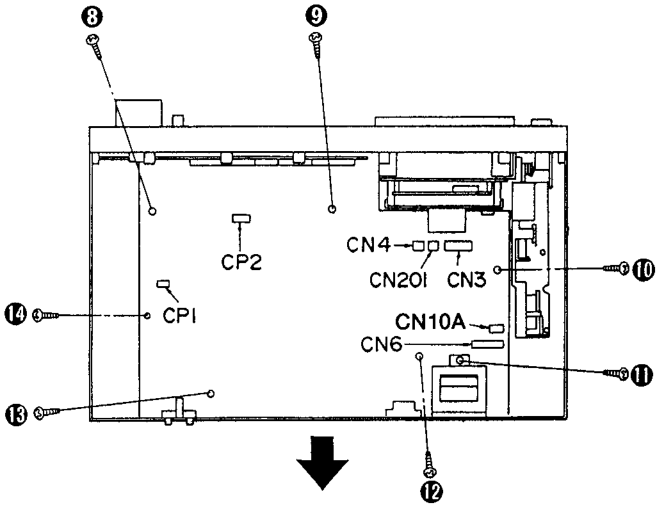
- Remove the 6 screws (❶~❻).

Ref. No. 2	Removal of the main P.C.B.
Procedure 1→2	

1. Remove the 7 screws (❶~❼).
2. Remove the rear panel from the projection of the bottom chassis.

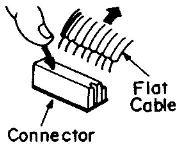

Projection
Rear Panel
Bottom Chassis
Projection
❶
❷
❸
❹
❺
❻
❼

3. Remove the 7 screws (❽~⓮).
4. Remove the 2 connectors (CP1, CP2).
5. Remove the 5 flat cables (CN3, CN4, CN6, CN10A, CN201).
6. Remove the main P.C.B. in the direction of the arrow.


❽
❾
❿
⓫
⓬
⓭
⓮
CP2
CP1
CN4
CN201
CN3
CN10A
CN6

How to remove the flat cable

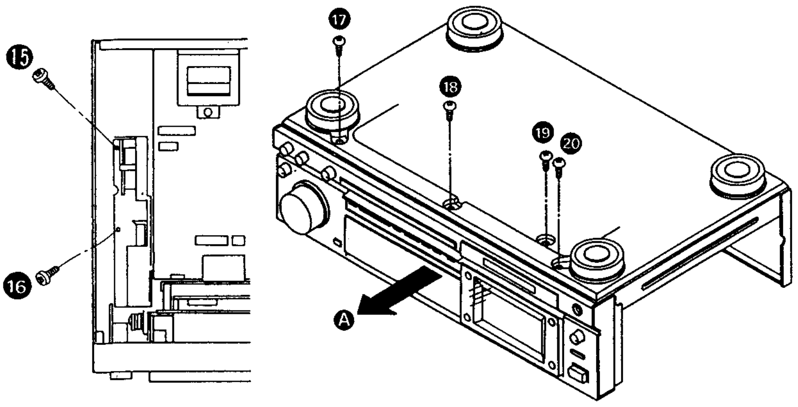
- Pull out the flat cable while pressing the connector.


Flat Cable
Connector

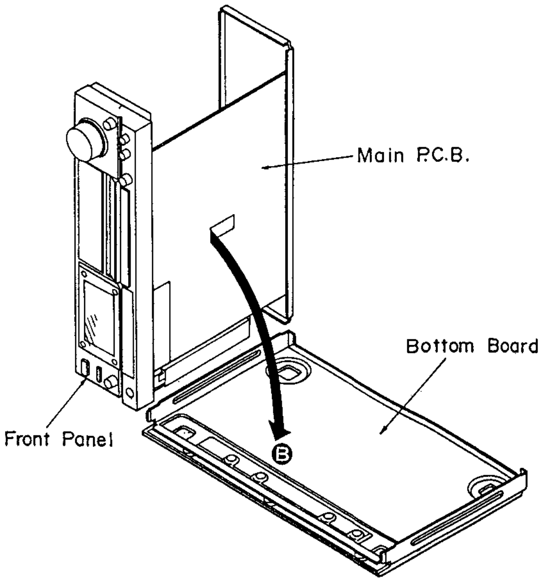
How to check the main P.C.B.

- When checking the soldered surfaces of main P.C.B. and replacing the parts, do as show.

1. Remove the 10 screws (❶, ❸, ❼~⓮) in above figure.
2. Remove the 6 screws (⓯~⓴).
3. Remove the front panel in the direction of the arrow Ⓐ.

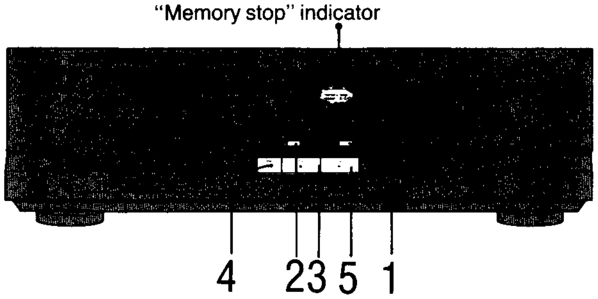


4. Remove the bottom board in the direction of the arrow Ⓑ.
5. Reinstall the front panel to the main P.C.B.


Main P.C.B.
Bottom Board
Front Panel
Ⓑ

Playback after "memory stop"

The tape is rewound to the designated point and then play can be begun from that point.



To set the playback start point

1 **Press the memory-stop button and then begin the playback.**
(The memory-stop indicator will illuminate.)

2 **Press the counter-reset button at the point to which you want the tape to rewind.**
(The counter will be reset to "0000".)

To begin playback from the set point

3 **Press the stop button.**

4 **Press the rewind (◀◀) button.**
The tape will be rewound to the set point, and then will be automatically stopped.

5 **Press the playback button to begin the playback once again.**

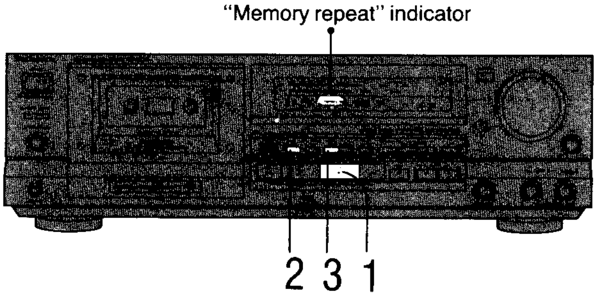
►To cancel the "memory stop" function, press the memory stop button once again.
(The memory stop indicator will be switched OFF.)

Notes:

- The "memory stop" function can be used while either the tape counter or the linear counter is displayed, but a change from one to the other cannot be made during the "memory stop" mode.
- There may be a slight difference (maximum +4 seconds) between the point where the tape counter was reset and the point where the tape actually stops during rewind.

A ←→ B repeat play ("memory repeat")

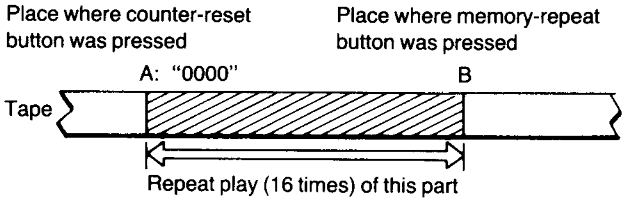
By simply designating the beginning ("0000") and the end of the part that you want to play repeatedly, that part can be repeatedly played for as many as 16 times.
(This repeat-play feature can be used only in the playback mode.)



1 **Press the playback button.**
(The playback indicator will illuminate, and playback will begin.)

2 **Press the counter-reset button at the place (A) where you want the repeat play to start.**
(The counter will be reset to "0000".)

3 **Press the memory-repeat button at the place (B) where you want the repeat play to end.**
(The memory-repeat indicator will illuminate.)
When the memory-repeat button is pressed, the tape will be rewound to point (A), and the repeat play will then begin.

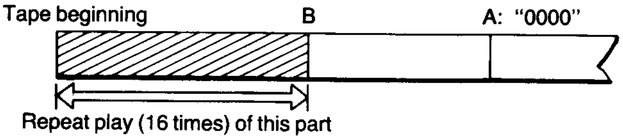

Place where counter-reset button was pressed
Place where memory-repeat button was pressed
A: "0000"
B
Tape
Repeat play (16 times) of this part

►To cancel the repeat-play function before it stops (after 16 repeats), press the memory-repeat button.
(The memory-repeat indicator will switch OFF.)
►To change the setting of point (B), first cancel the repeat-play operation (see above), and then press the memory-repeat button at the new place.

Notes:

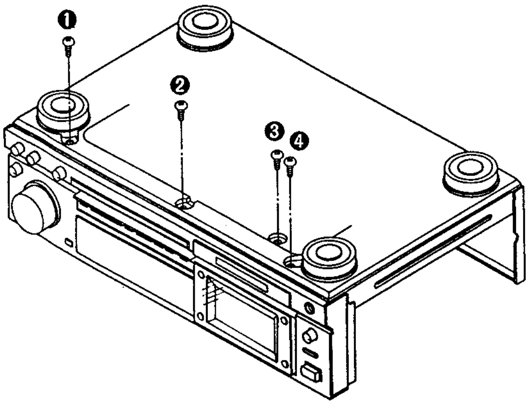
- The repeat-play function will be cancelled if the stop button or the rewind/fast-forward/search button is pressed during repeat play. To stop temporarily, press the pause button.
- Repeat play is possible while either the tape counter or the linear counter is displayed, but a change from one to the other cannot be made while repeat play is in progress.
- If, after setting point (A), the tape is rewound to set point (B), the repeat play will be of the part between the tape beginning and point (B).

(The linear counter reading will be a minus reading.)

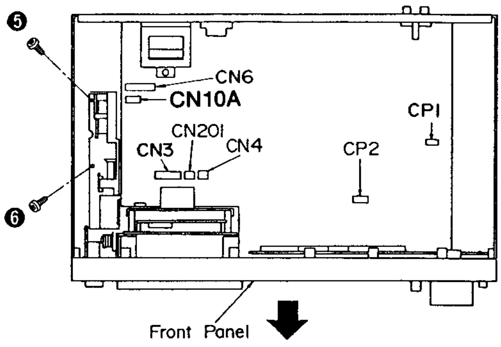


- There may be a slight difference (maximum ±4 seconds) between the settings made for points (A) and (B) and the points at which the tape is actually played during repeat play.

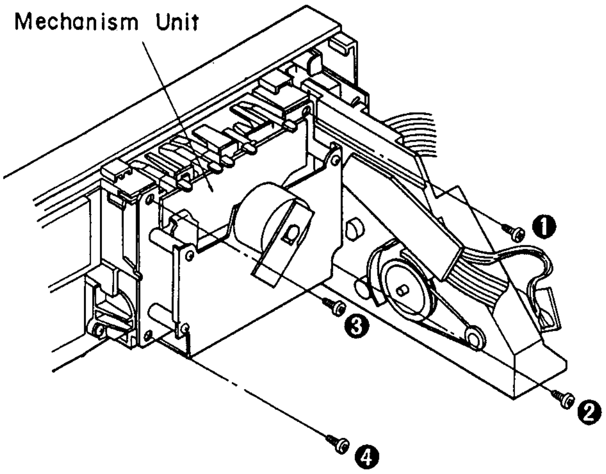
Ref. No. **3**	**Removal of the front panel**
Procedure **1→3**	1. Remove the 6 screws (❶~❻).



2. Remove the 2 connectors (CP1, CP2).
3. Remove the 5 flat cables (CN3, CN4, CN6, CN10A, CN201).
4. Remove the front panel in the direction of the arrow.

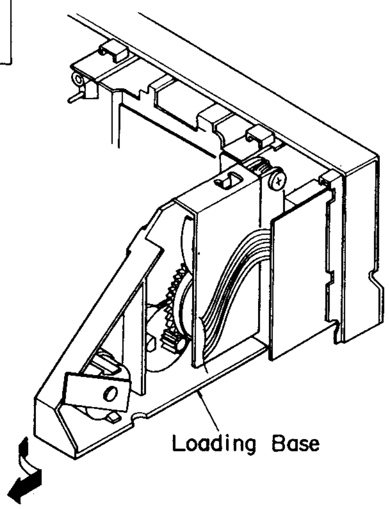

❺
❻
CN6
CN10A
CN201
CN3
CN4
CP2
CPI
Front Panel

Ref. No. **4**	**Removal of the mechanism unit**
Procedure **1→3→4**	


Mechanism Unit
❶
❷
❸
❹

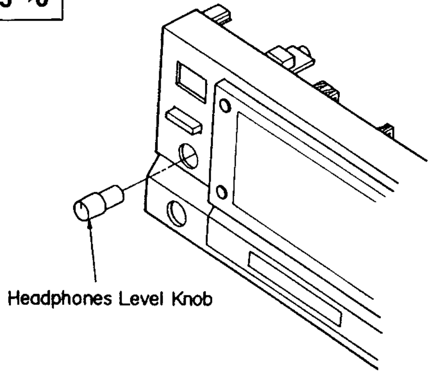
- Remove the 4 screws (❶~❹).

Ref. No. **5**	**Removal of the loading base**
Procedure **1→3→4→5**	

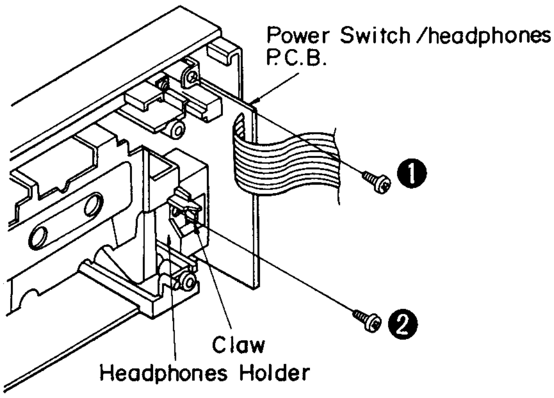

Loading Base

- Remove the loading base in the direction of the arrow.

Ref. No. **6**	**Removal of the power swich/ headphones P.C.B.**
Procedure **1→3→4→5→6**	


Headphones Level Knob

1. Pull cut the headphones level knob.

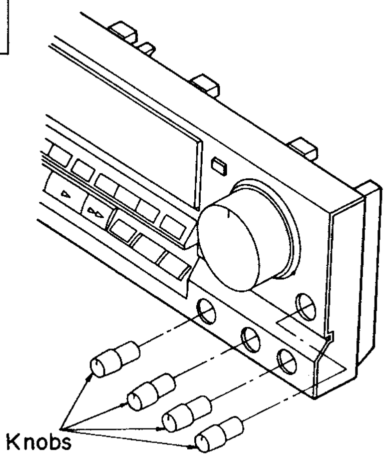

Power Switch /headphones P.C.B.
❶
❷
Claw
Headphones Holder

2. Remove the 2 screws (❶, ❷).
3. Release the 1 claw.
4. Remove the headphones holder.

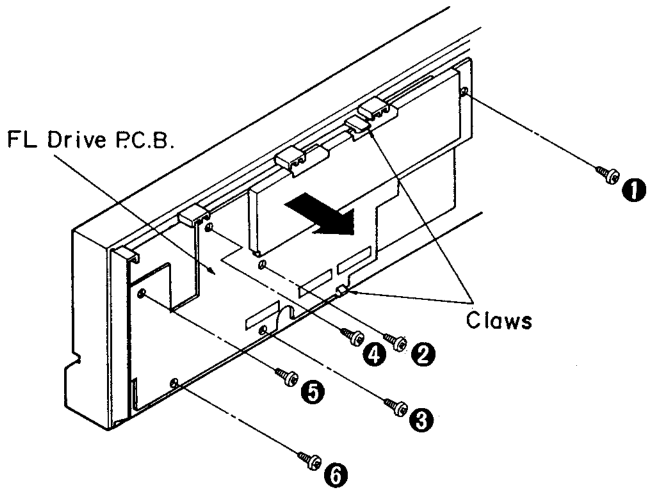
Ref. No.
7

Removal of the FL Drive P.C.B.

Procedure
1→3→7



1. Pull out the 4 knobs.

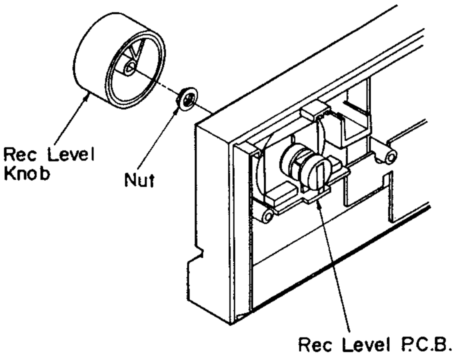

FL Drive P.C.B.
❶
Claws
❹
❷
❺
❸
❻

2. Remove the 6 screws (❶~❻).
3. Release the 2 claws.
4. Remove the FL P.C.B. in the direction of the arrow.

Ref. No.
8

Removal of the rec level P.C.B.

Procedure
1→3→7→8

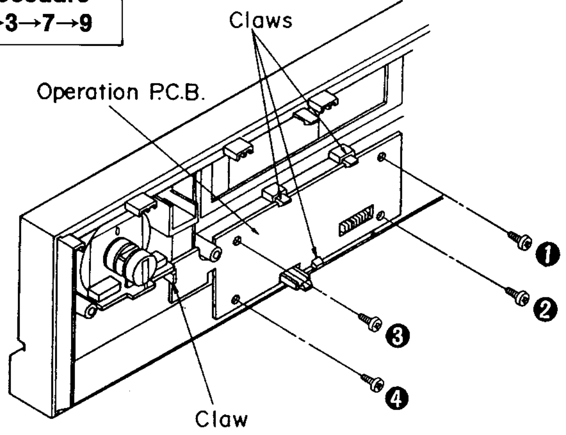

Rec Level Knob
Nut
Rec Level P.C.B.

1. Pull out the rec level knob.
2. Remove the 1 nut.

Ref. No.
9

Removal of the operation switch P.C.B.

Procedure
1→3→7→9

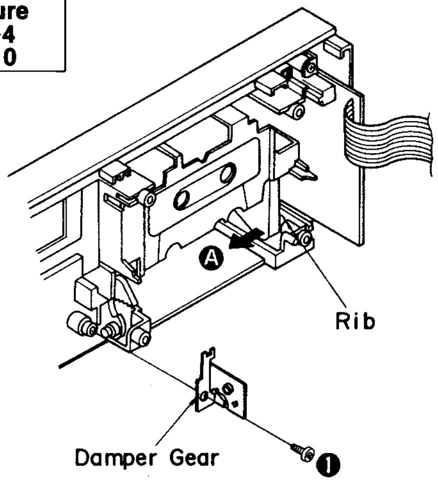

Claws
Operation P.C.B.
❶
❷
❸
❹
Claw

1. Remove the 4 screws (❶~❹).
2. Release the 4 claws.

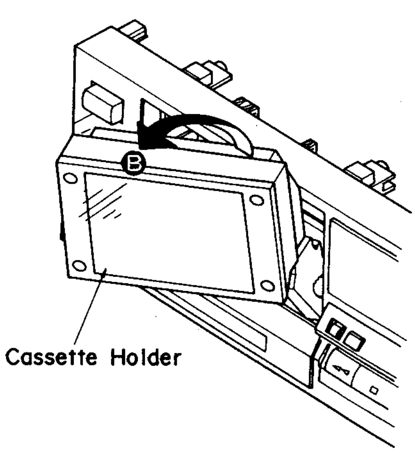
Ref. No.
10

Removal of the cassette holder

Procedure
1→3→4
→5→10

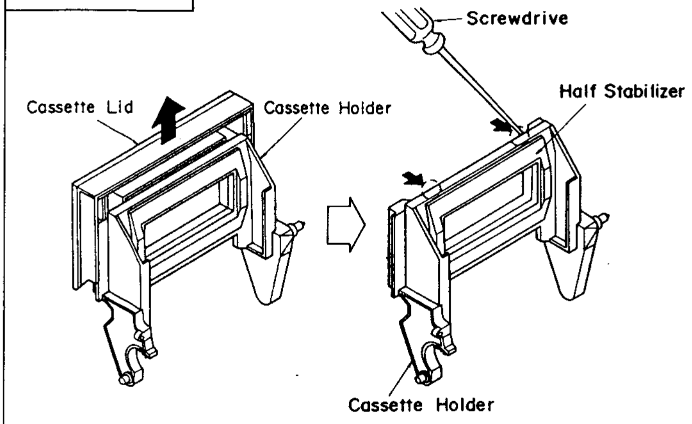

Ⓐ
Rib
Damper Gear
❶

1. Remove the 1 screw (❶).
2. Remove the damper gear.
3. Remove the rib in the direction of the arrow Ⓐ.

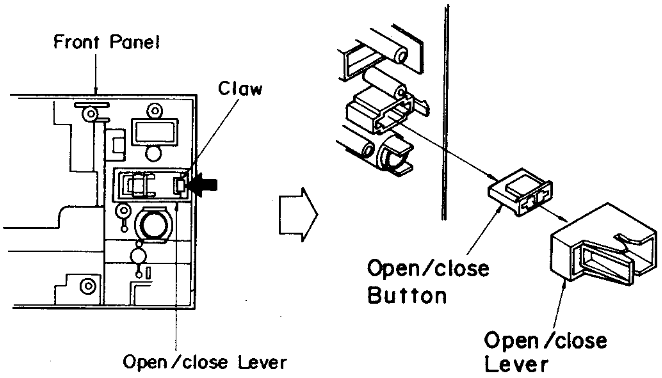

Ⓑ
Cassette Holder

4. Remove the cassette holder in the direction of the arrow Ⓑ.

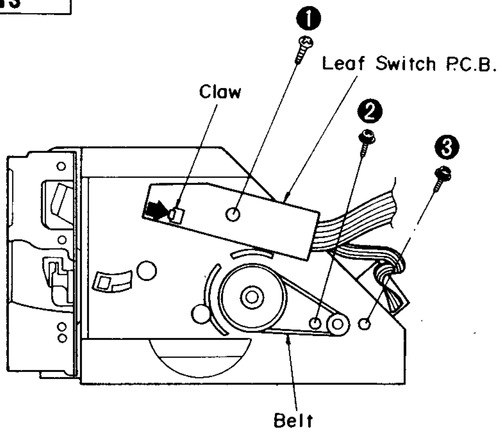
Ref. No. 11	Removal of the cassette cover and cassette half stabilizer
Procedure 10→11	


Screwdrive
Cassette Lid
Cassette Holder
Half Stabilizer
Cassette Holder

Ref. No. 12	Removal of the open/close lever and open/close button
Procedure 5→6→12	


Front Panel
Claw
Open/close Lever
Open/close Button
Open/close Lever

Ref. No. 13	Removal of the leaf switch P.C.B. and eject drive motor
Procedure 1→3→4 →5→13	

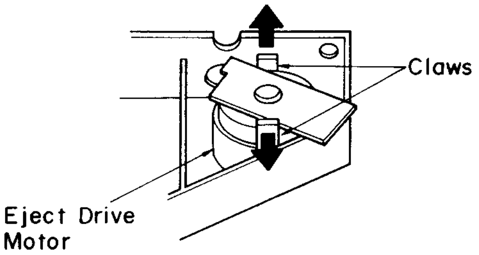

❶
Leaf Switch P.C.B.
Claw
❷
❸
Belt

■ Removal of the leaf swich P.C.B.

1. Remove the 1 screw (❶).
2. Release the 1 claw.

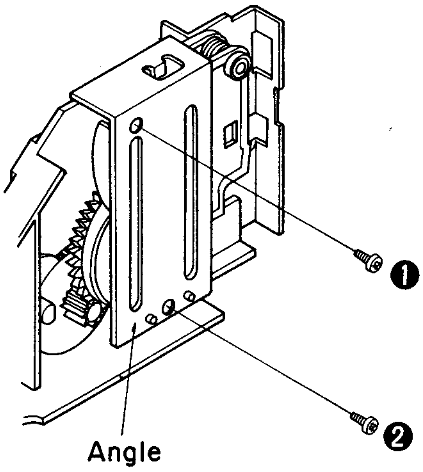
■ Removal of the eject drive motor

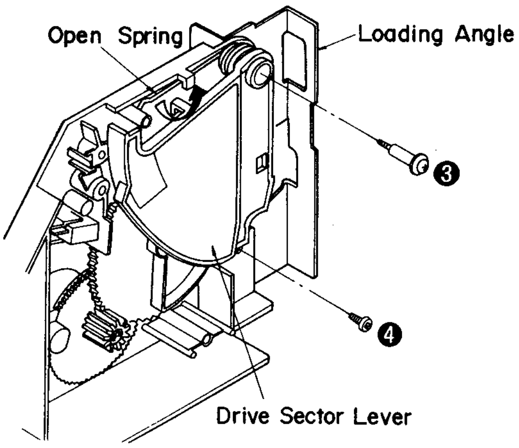
1. Remove the belt.
2. Remove the 2 screws (❷, ❸).
3. Release the 2 claw.


Claws
Eject Drive Motor

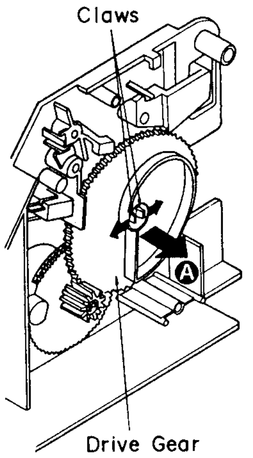
Ref. No. 14	Removal of the drive sector lever and loading angle
Procedure 1→3→4→14	

1. Remove the 2 screws (❶, ❷).
2. Remove the angle.
3. Remove the 2 screws (❸, ❹).
4. Remove the loading angle.
5. Remove the open lever spring in the direction of the arrow.




Open Spring
Loading Angle
❸
❹
Drive Sector Lever

Ref. No. 15	Removal of the drive gear
Procedure 14→15	

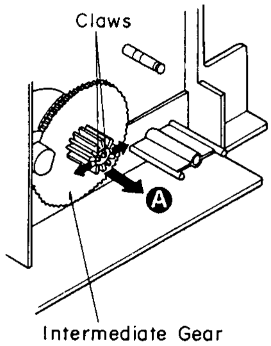

Claws
A
Drive Gear

1. Release the 2 claws.
2. Remove the drive gear in the direction of the arrow Ⓐ.

Ref. No. 16	Removal of the intermediate gear, leaf switch lever-A, leaf switch lever-B, and leaf switch lever-C
Procedure 14→15→16	

■ Removal of the intermediate gear

1. Release the 2 claws.
2. Remove the intermediate gear in the direction of the arrow Ⓐ.


Claws
A
Intermediate Gear

■ Removal of the leaf switch lever-A

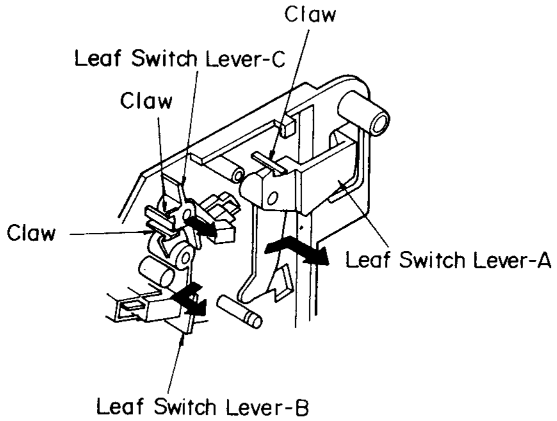
- Release the 1 claw.

■ Removal of the leaf switch lever-B

- Release the 1 claw.

■ Removal of the leaf switch lever-C

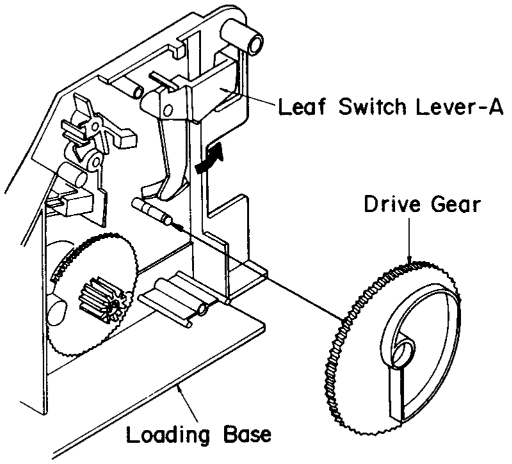
- Release the 1 claw.


Claw
Leaf Switch Lever-C
Claw
Claw
Leaf Switch Lever-A
Leaf Switch Lever-B

Ref. No. 17	Installation of the Drive Gear and the Drive Sector Lever
Procedure 17	

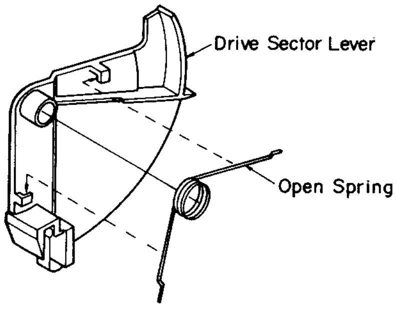
■ Installation of the Drive Gear

1. Push the leaf switch lever A in the direction of the arrow.
2. Place the drive gear as shown below and then install it in the loading base.

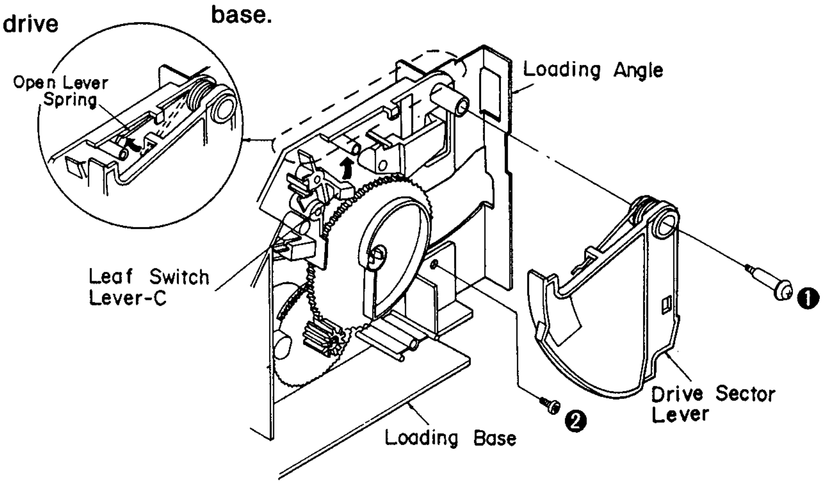

Leaf Switch Lever-A
Drive Gear
Loading Base

■ Installation of the Drive Sector Lever

1. Temporarily install the open spring in the drive sector lever.


Drive Sector Lever
Open Spring

2. Install the loading angle in the loading base and then secure it with the 1 screw ❷.
3. Push the leaf switch lever C in the direction of the arrow.
4. Secure the drive sector lever with 1 screw ❶.
5. Engage the open spring in the claw of the loading base.


Open Lever Spring
Loading Angle
Leaf Switch Lever-C
❶
Drive Sector Lever
❷
Loading Base

MEASUREMENT AND ADJUSTMENT METHODES

Measurement Condition

- Rec. level control; Maximum
- Timer switch; Off
- MPX filter switch: off
- Bias-adjustment VR: Center
- Rec. balance control; Center
- Rec. calibration adjustment; Center
- Dolby NR switch; Off
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature 20±5°C (68±9°F)

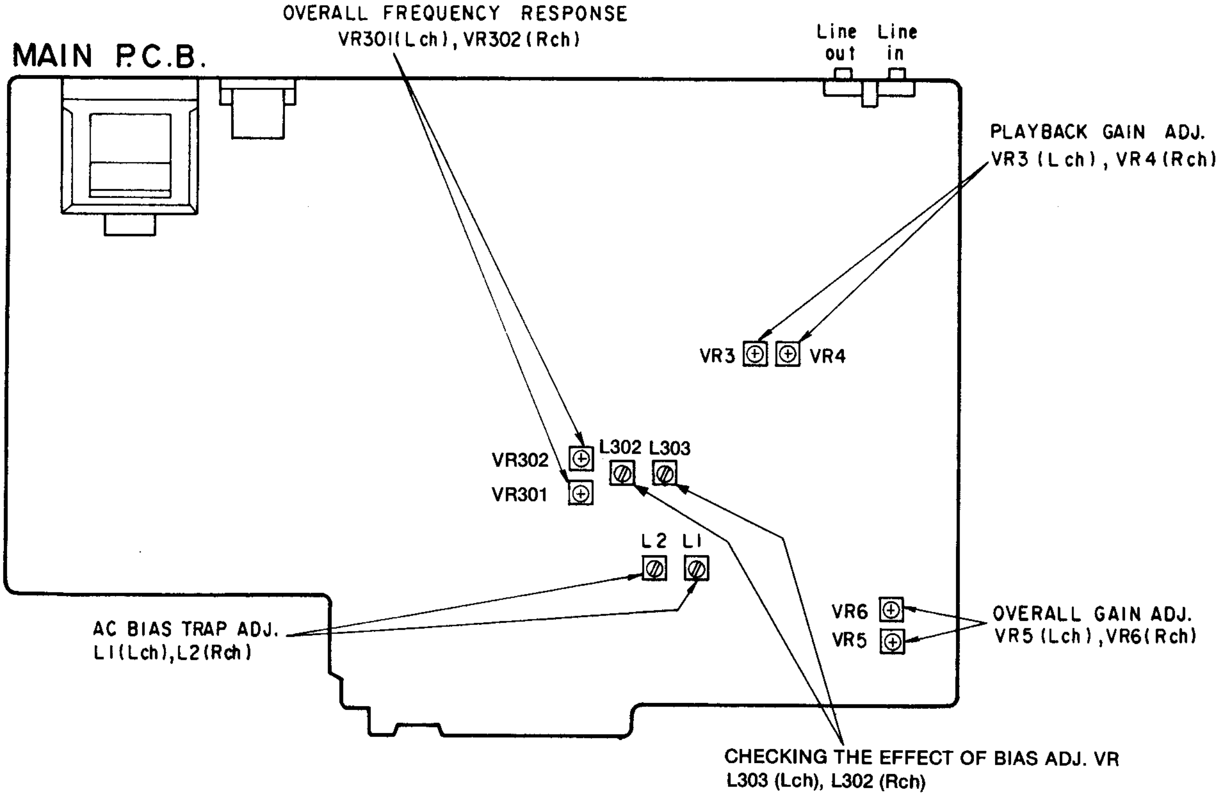
Measuring Instrument

- EVM (Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator
- ATT (Attenuator)
- DC voltmeter
- Resistor (600Ω)

Test tape

- Head azimuth adjustment (8kHz, −20dB); QZZCFM
- Tape speed adjustment (3kHz, −10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, −20dB); QZZCFM
- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall frequency response, Overall gain adjustment
  Normal reference blank tape ; QZZCRA
  CrO_2 reference blank tape; QZZCRX
  Metal reference blank tape; QZZCRZ

• Adjustment Points


MAIN P.C.B.
OVERALL FREQUENCY RESPONSE
VR301(Lch), VR302(Rch)
Line out
Line in
PLAYBACK GAIN ADJ.
VR3 (Lch), VR4(Rch)
VR3
VR4
VR302
VR301
L302
L303
L2
L1
AC BIAS TRAP ADJ.
L1(Lch),L2(Rch)
VR6
VR5
OVERALL GAIN ADJ.
VR5 (Lch), VR6(Rch)
CHECKING THE EFFECT OF BIAS ADJ. VR
L303 (Lch), L302 (Rch)

HEAD AZIMUTH ADJUSTMENT

1.Playback the azimuth adjusment portion (8 kHz, -20 dB) of the test tape (QZZCFM). Vary the azimuth adjusting screw until the outputs of the L-CH and R-CH are maximized and the lissajous waveform, as illustrated, approaches 0 degrees.

Note: If L-CH and R-CH are not maximized at the same point, adjust to the point where the levels of each channel are maximized and equal.

2.Perform the same adjustment in the play mode.

3.After the adjustment, apply screwlock to the azimuth adjusting screw.

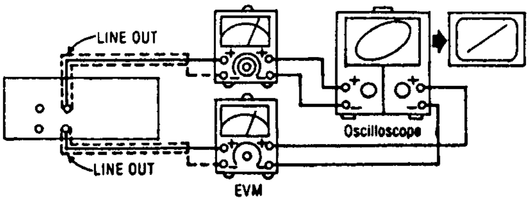

LINE OUT
LINE OUT
Oscilloscope
EVM

Fig. 1

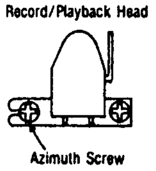

Record/Playback Head
Azimuth Screw

Fig. 2

PLAYBACK GAIN ADJUSTMENT

1.Playback the gain adjusted portion (315 Hz, 0 dB) of the test tape (QZZCFM).

2.Adjust **VR3** (L-CH) and **VR4** (R-CH) so that the output is within the standard value.

Standard value: 0.4V±0.5dB

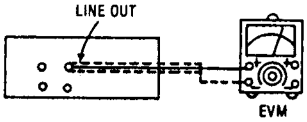

LINE OUT
EVM

Fig. 3

PLAYBACK FREQUENCY RESPONSE

1. Playback the frequency response portion (315Hz, 12.5kHz~63Hz, −20dB) of the test tape (QZZCFM).
2. Assure that the frequency response is within the range shown in **Fig. 6** for both L-CH and R-CH.

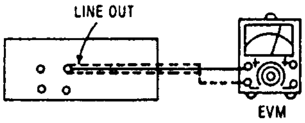

LINE OUT
EVM

Fig. 4

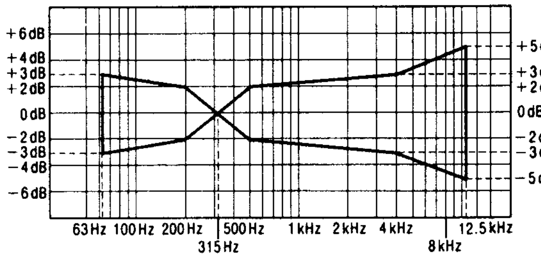
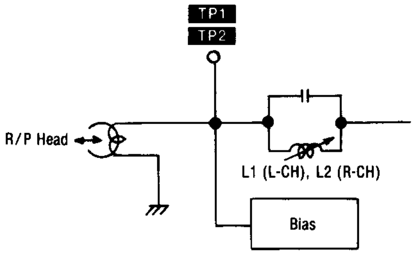


Fig. 5

AC BIAS TRAP ADJUSTMENT

1. Insert the Metal blank test tape (QZZCRZ) and set the unit to the Record mode.
2. Adjust **L1** (L-CH) [[**L2** (R-CH)]] so that the output voltage between **TP1** (**TP2**) and GND is less than the minimum value.


TP1
TP2
R/P Head
L1 (L-CH), L2 (R-CH)
Bias

TERMINAL FUNCTION OF IC'S

• IC901 (MB88511-224N): MICROCOMPUTER (This microcomputer is used for mechanical operation.)

Pin No.	Mark	I/O Division	Function
1	DMT	O	Line out mute signal ("H"...ON, "L"...OFF)
2	RMT	O	REC AMP mute signal ("H"...ON, "L"...OFF)
3	$\overline{BOS}$	O	BIAS OSC ON/OFF control signal ("H"...OFF, "L"...ON)
4	$\overline{REC}$	O	REC LED ON/OFF control signal ("H"...OFF, "L"...ON)
5	$\overline{PLAY}$	O	PLAY LED ON/OFF control signal ("H"...OFF, "L"...ON)
6	EJECT F	O	Power eject motor open control signal ("H"...OPEN, "L"...CLOSE/STOP)
7	EJECT R	O	Power eject motor close control singnal ("H"...CLOSE, "L"...OPEN/STOP)
8	$\overline{CAPM}$	O	Capstan motor ON/OFF control signal ("H"...OFF (POWER OFF or ABNORMAL CONDITION), "L"...ON)
9	$\overline{SOL1}$	O	Trigger solenoid ON/OFF control signal ("H"...OFF, "L"...ON)
10	$\overline{SOL2}$	O	Brake solenoid ON/OFF control signal ("H"...OFF, "L"...ON)
11	$\overline{SOL2C}$	O	Brake solenoid hold ON/OFF control signal ("H"...OFF, "L"...ON (FF/REW/MS)
12	RP (REEL PULSE)	I	Reel pulse signal
13	RMR	O	Reel motor reverse control signal ("H"...REW, "L"...STOP/PLAY/FF)
14	RMF	O	Reel motor foward control signal ("H"...FF/PLAY, "L"...STOP/REW)
15	$\overline{OSC}$	I	Single capstan/Dual capstan select signal ("H"...DUAL CAPSTAN, "L"...SINGLE CAPSTAN)
		O	Calibration OSC circuit ON/OFF control signal ("H"...OFF, "L"...ON)
16	Ex	I	Clock OSC terminal (6 MHz)
17	X	O	
18	$\overline{RES}$	I	Reset signal ("L"...RESET)
19	OSCF	O	Not used in this unit. Calibration OSC circuit (400 Hz/10 kHz) select signal ("H"... HIGH FREQ. (10 kHz), "L"... LOW FREQ. (400 Hz)
20	$\overline{POF}$	I	AC POWER detect signal
21	Vss	—	GND

<table>
<tr><th>Pin No.</th><th>Mark</th><th>I/O Division</th><th colspan="6">Function</th></tr>
<tr><td rowspan="2">22</td><td rowspan="2">$\overline{DIRECT}$</td><td>I</td><td colspan="6">CD direct operation det. signal</td></tr>
<tr><td>O</td><td colspan="6">CD direct/LINE input select control signal ("H"...CD DIRECT, "L"...LINE INPUT)</td></tr>
<tr><td rowspan="2">23</td><td rowspan="2">$\overline{C}$</td><td rowspan="3">O</td><td rowspan="3">Dolby NR mode select signal</td><td></td><td>NR OFF</td><td>Dolby B</td><td>Dolby C</td><td>dbx</td></tr>
<tr><td>$\overline{C}$</td><td>H</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>24</td><td>$\overline{B}$</td><td>$\overline{B}$</td><td>H</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>25</td><td>MPX</td><td>O</td><td colspan="6">MPX coil ON/OFF control signal ("H"...MPX OFF, "L"...MPX ON)</td></tr>
<tr><td rowspan="2">26</td><td rowspan="2">$T/\overline{S}$</td><td>I</td><td colspan="6">Two head/Three head select signal ("H"... THREE HEAD)</td></tr>
<tr><td>O</td><td colspan="6">Tape/Source monitor select control ("H"...TAPE MONITOR, "L"...SOURCE MONITOR)</td></tr>
<tr><td>27</td><td>$\overline{HALF}$</td><td>I</td><td colspan="6">Cassette half det. SW terminal ("L"...ON)</td></tr>
<tr><td>28</td><td>$\overline{MODE}$</td><td>I</td><td colspan="6">Mechanism mode SW terminal</td></tr>
<tr><td>29</td><td>$\overline{ARM}$</td><td>I</td><td colspan="6">Auto Rec Mute key signal ("L"...PUSH)</td></tr>
<tr><td>30</td><td>AVss</td><td>—</td><td colspan="6">Connected to GND</td></tr>
<tr><td>31</td><td>$AV\overline{R}$</td><td>—</td><td colspan="6">Connected to GND</td></tr>
<tr><td>32</td><td>AVcc</td><td>—</td><td colspan="6">Power supply terminal</td></tr>
<tr><td>33</td><td>KEY 1</td><td>I</td><td colspan="6">Key SW input (STOP/FF REW/PLAY/REC/PAUSE/C/B/MPX/TIMER REC/TIMER PLAY)</td></tr>
<tr><td>34</td><td>KEY 2</td><td>I</td><td colspan="6">Key SW input (MEMORY REPEAT/MEMORY STOP/EJECT/MONITOR/CD DIRECT/OSC/TEST)</td></tr>
<tr><td>35</td><td>ATS</td><td>I</td><td colspan="6">Auto Tape Select SW input (ATSC/ATSM/EJECT OPEN LEAF SW)</td></tr>
<tr><td>36</td><td>INH</td><td>I</td><td colspan="6">REC INH SW input (REC INH/EJECT MOTOR LEAF SW)</td></tr>
<tr><td>37</td><td>SYNC</td><td>—</td><td colspan="6">Connected to GND</td></tr>
<tr><td>38</td><td>DISP</td><td>O</td><td colspan="6">Serial data signal of FL display (ACTIVE: "H")</td></tr>
<tr><td>39</td><td>MSP</td><td>I</td><td colspan="6">Music select det. signal ("H"...NO SIGNAL, "L"...ON SIGNAL)</td></tr>
<tr><td>40</td><td>$\overline{\text{MEMORY PULSE}}$</td><td>I</td><td colspan="6">Memory Pulse signal</td></tr>
<tr><td>41</td><td>$\overline{REMOCON}$</td><td>I</td><td colspan="6">Not used in this unit.
Remote control serial data ("L" for 50 ms. with counter "0000")</td></tr>
<tr><td>42</td><td>Vcc</td><td>—</td><td colspan="6">Power supply terminal</td></tr>
</table>

OVERALL FREQUENCY RESPONSE

1. Insert the normal blank test tape (QZZCRA) and set the unit to the record pause mode.
2. Apply a reference input signal (1 kHz, −24 dB) through an attenuator.
3. Attenuate the signal by 20 dB and adjust the frequency from 50 Hz~10 kHz.
4. Record the frequency sweep.
5. Playback the recorded signal and assure that it is within the range shown in **Fig. 8** in comparison to the reference frequency (1 kHz).
6. If it is not within the standard range, adjust **VR301** (L-CH) and **VR302** (R-CH) so that the frequency level is within the standard range.
   - Level up in high frequency range........Increase the bias current.
   - Level down in high frequency range...Decrease the bias current.
7. Repeat steps 2~6 above using the CrO_2 tape (QZZCRX) and the metal tape (QZZCRZ) increasing the frequency range to 12.5 kHz (50 Hz~12.5 kHz).
8. Assure that the level is within the range shown in **Fig. 9**.

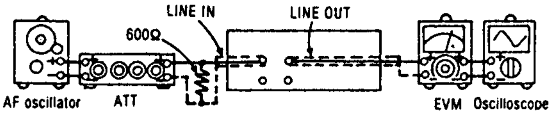


Fig. 10

Normal Overall frequency response chart (NR OUT)

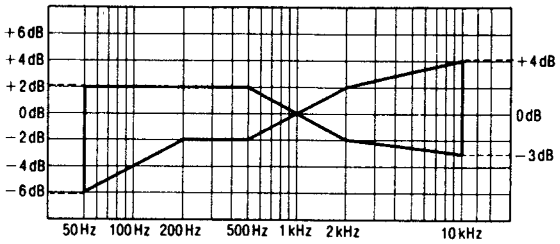


Fig. 8

CrO_2 Metal Overall frequency response chart (NR OUT)

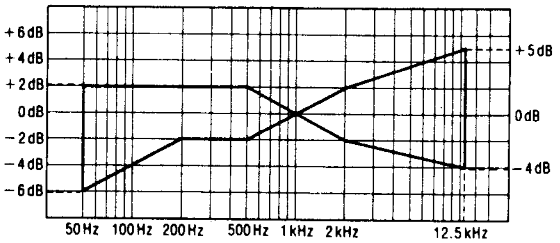


Fig. 9

OVERALL GAIN ADJUSTMENT

1. Insert the normal blank test tape (QZZCRA) and set the unit to the record pause mode.
2. Apply a reference input signal (1 kHz, −24 dB). Attenuate the output so that its level becomes 0.4 V.
3. Record this input signal.
4. Playback the signal recorded in step 3 above, and assure that the output is within the standard value.
5. If it is not within the standard value, adjust **VR5** (L-CH) and **VR6** (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

Standard value: 0.4 V ± 0.5 dB

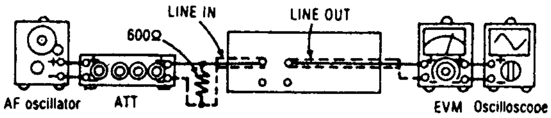
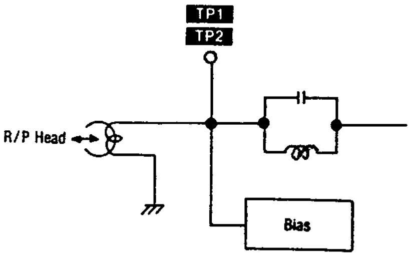


Fig. 11

CHECKING THE EFFECT OF BIAS ADJ. VR

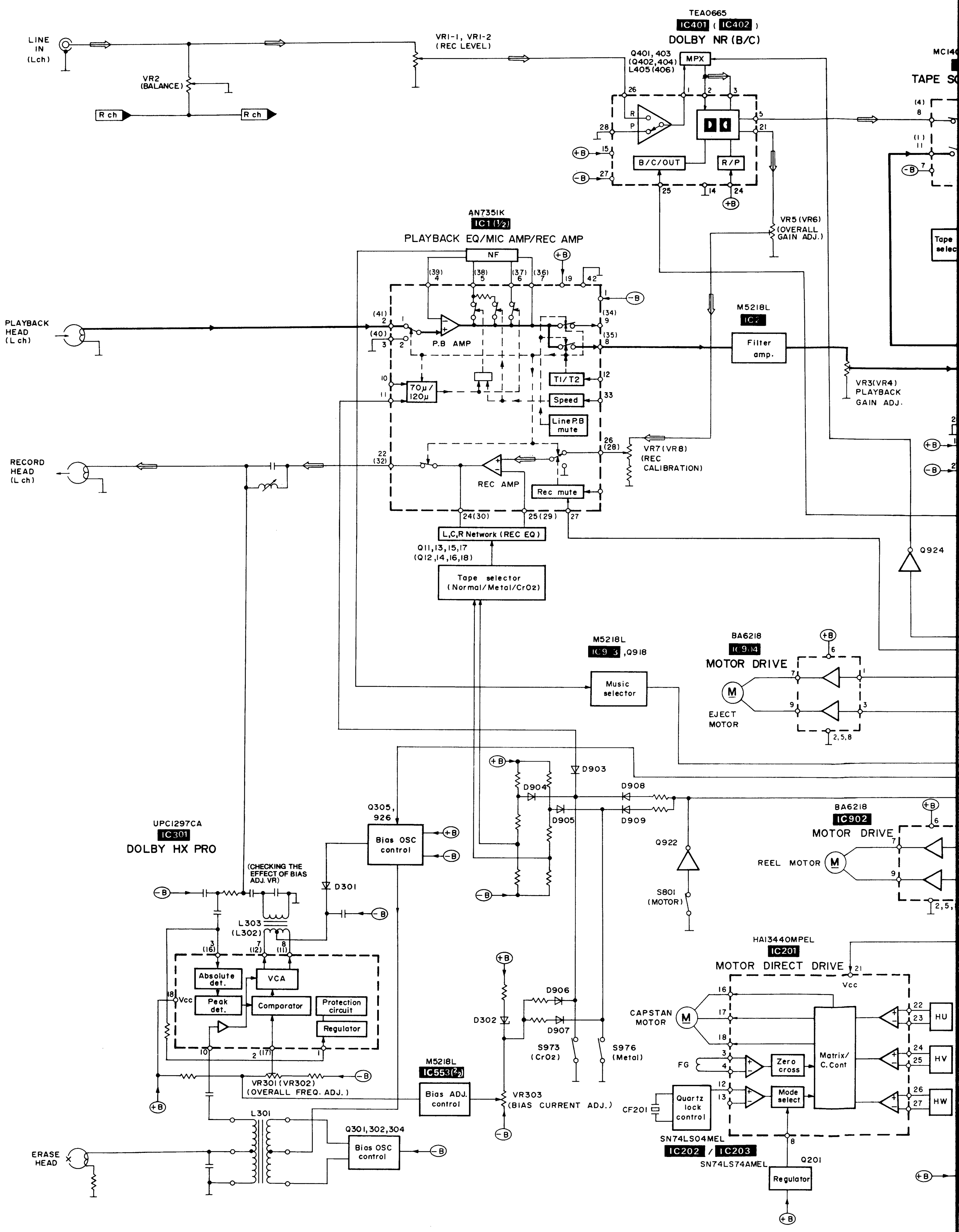
1. Insert the Metal blank test tape (QZZCRZ) and set the unit to the Record mode.
2. While turning the Bias Adj. VR from minimum to maximum, verify that the output at **TP1** (L-CH) and **TP2** (R-CH) to ground vary more than +3.5 dB.
   If the output variation span is less than +3.5 dB, adjust **L303** (L-CH) or **L302** (R-CH) until it exceeds +3.5 dB.

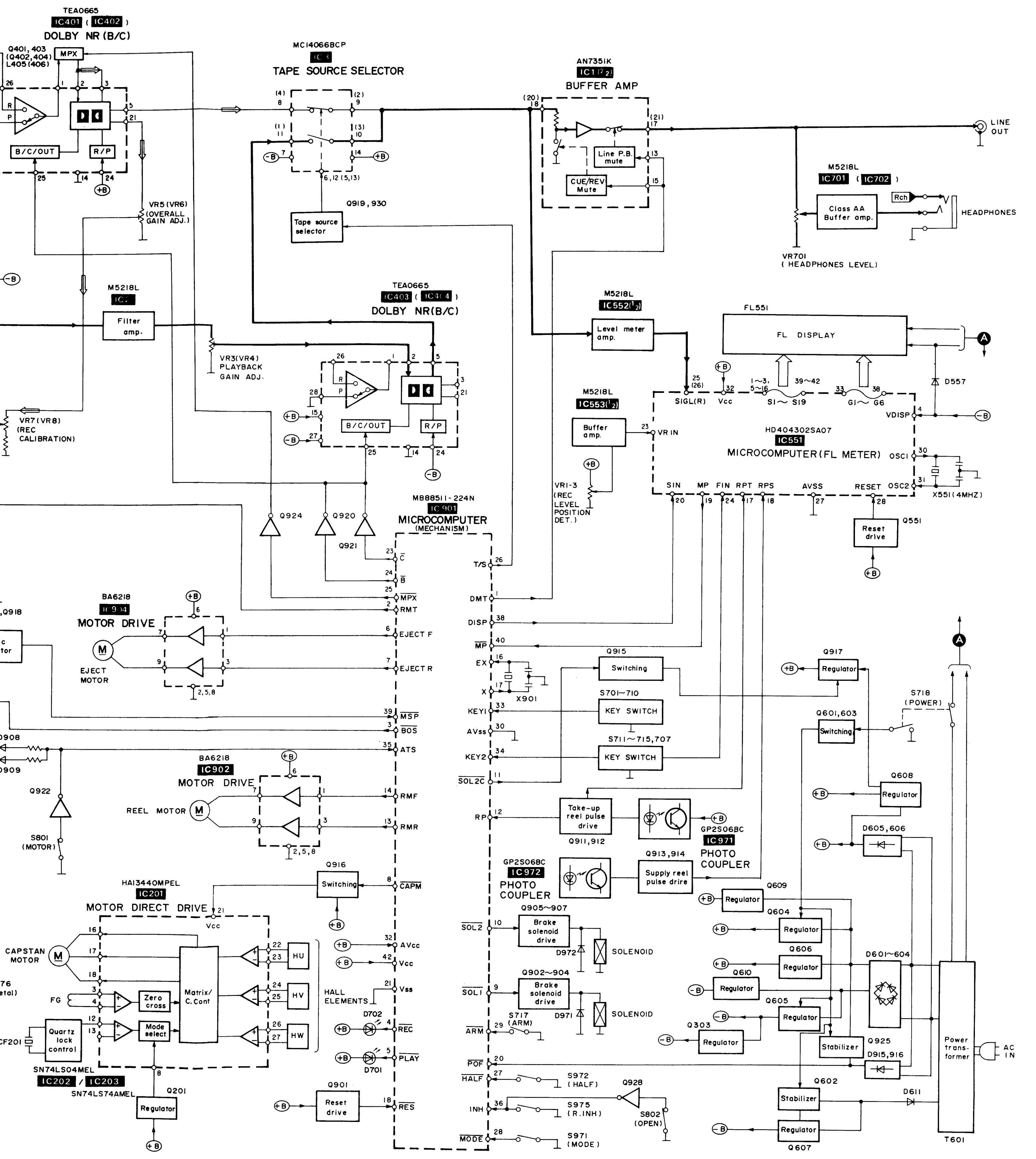


• IC551 (HD404302SA07): MICROCOMPUTER (This microcomputer is used for FL meter operation.)

Pin No.	Mark	I/O Division	Function
1	S5	O	Segment signal for FL display
2	S6	O	
3	S7	O	
4	Vdisp	—	Pull down power supply terminal (−Vcc)
5	S8	O	Segment signal for FL display
6	S9	O	
7	S10	O	
8	S11	O	
9	S12	O	
10	S13	O	
11	S14	O	
12	S15	O	
13	S16	O	
14	S17	O	
15	S18	O	
16	S19	O	
17	RPT	I	Reel pulse signal of tape up reel
18	RPS	I	Reel pulse signal of supply reel
19	MP	O	Memory pulse signal ("L" for 50 ms. with counter "0000")
20	DISP	I	Serial data signal (ACTIVE: "H")
21	GND	—	GND terminal
22	AVcc	—	Power supply terminal
23	VR IN	I	Rec level control (VR MAX...+5V)
24	F IN	I	Function key terminal (COUNTER RESET/COUNTER MODE/APRS)
25	SIG L	I	LCH level signal
26	SIG R	I	RCH level signal
27	AVss	—	Connected to GND
28	RESET	I	Reset terminal (with Reset: "H")
29	$\overline{\text{TEST}}$	I	Test terminal
30	OSC 1	O	Clock OSC terminal (4 MHz)
31	OSC 2	I	
32	Vcc	I	Power supply terminal
33	G1	O	Grid signal for FL display
34	G2	O	
35	G3	O	
36	G4	O	
37	G5	O	
38	G6	O	
39	S1	O	Segment signal for FL display
40	S2	O	
41	S3	O	
42	S4	O	

■ BLOCK DIAGRAM


LINE IN (Lch)
VR2 (BALANCE)
R ch
VR1-1, VR1-2 (REC LEVEL)
TEA0665
IC401 (IC402)
DOLBY NR (B/C)
Q401, 403 (Q402, 404) L405 (406)
MPX
B/C/OUT
R/P
MC14
TAPE S
VR5 (VR6) (OVERALL GAIN ADJ.)
AN7351K
IC1 (1/2)
PLAYBACK EQ/MIC AMP/REC AMP
NF
PLAYBACK HEAD (L ch)
P.B AMP
70μ/120μ
T1/T2
Speed
Line P.B mute
M5218L
IC2
Filter amp.
VR3 (VR4) PLAYBACK GAIN ADJ.
RECORD HEAD (L ch)
REC AMP
Rec mute
VR7 (VR8) (REC CALIBRATION)
L,C,R Network (REC EQ)
Q11, 13, 15, 17 (Q12, 14, 16, 18)
Tape selector (Normal/Metal/CrO2)
Q924
M5218L
IC913, Q918
Music selector
BA6218
IC914
MOTOR DRIVE
EJECT MOTOR
D903
D904
D905
D908
D909
Q305, 926
Bias OSC control
UPC1297CA
IC301
DOLBY HX PRO
(CHECKING THE EFFECT OF BIAS ADJ. VR)
D301
L303 (L302)
Absolute det.
Peak det.
VCA
Comparator
Protection circuit
Regulator
Vcc
VR301 (VR302) (OVERALL FREQ. ADJ.)
L301
Q301, 302, 304
Bias OSC control
ERASE HEAD
M5218L
IC553 (2/2)
Bias ADJ. control
VR303 (BIAS CURRENT ADJ.)
D302
D906
D907
S973 (CrO2)
S976 (Metal)
Q922
S801 (MOTOR)
BA6218
IC902
MOTOR DRIVE
REEL MOTOR
HA13440MPEL
IC201
MOTOR DIRECT DRIVE
CAPSTAN MOTOR
FG
Zero cross
Mode select
Matrix/C.Cont
HU
HV
HW
Quartz lock control
CF201
SN74LS04MEL
IC202 / IC203
SN74LS74AMEL
Q201
Regulator
+B
−B


TEA0665
IC401 (IC402)
DOLBY NR (B/C)
MPX
B/C/OUT
R/P
VR5 (VR6) (OVERALL GAIN ADJ.)
MC14066BCP
IC
TAPE SOURCE SELECTOR
Tape source selector
Q919, 930
AN7351K
IC1 (1/2)
BUFFER AMP
Line P.B. mute
CUE/REV Mute
LINE OUT
M5218L
IC701 (IC702)
Class AA Buffer amp.
HEADPHONES
VR701 (HEADPHONES LEVEL)
M5218L
Filter amp.
VR3 (VR4) PLAYBACK GAIN ADJ.
TEA0665
IC403 (IC404)
DOLBY NR (B/C)
VR7 (VR8) (REC CALIBRATION)
M5218L
IC552 (1/2)
Level meter amp.
FL551
FL DISPLAY
D557
M5218L
IC553 (1/2)
Buffer amp.
VRI-3 (REC LEVEL POSITION DET.)
SIGL(R)
Vcc
S1~S19
G1~G6
VDISP
VR IN
HD404302SA07
IC551
MICROCOMPUTER (FL METER)
OSC1
OSC2
X551 (4MHZ)
SIN MP FIN RPT RPS AVSS RESET
Reset drive
Q551
Q924
Q920
Q921
M88851I-224N
IC901
MICROCOMPUTER (MECHANISM)
T/S
DMT
DISP
MP
EX
X
KEY1
AVss
KEY2
SOL2C
RP
SOL2
SOL1
ARM
POF
HALF
INH
MODE
MPX
RMT
EJECT F
EJECT R
MSP
BOS
ATS
RMF
RMR
CAPM
AVcc
Vcc
Vss
REC
PLAY
RES
BA6218
IC904
MOTOR DRIVE
EJECT MOTOR
BA6218
IC902
MOTOR DRIVE
REEL MOTOR
Q922
S801 (MOTOR)
Q908
Q909
Q915
Switching
X901
S701~710
KEY SWITCH
S711~715,707
KEY SWITCH
Take-up reel pulse drive
Q911, 912
GP2S06BC
IC971
PHOTO COUPLER
Q913, 914
Supply reel pulse drive
GP2S06BC
IC972
PHOTO COUPLER
Q905~907
Brake solenoid drive
D972
SOLENOID
Q902~904
Brake solenoid drive
D971
SOLENOID
S717 (ARM)
S972 (HALF)
S975 (R.INH)
S971 (MODE)
Q928
S802 (OPEN)
Q916
Switching
HA13440MPEL
IC201
MOTOR DIRECT DRIVE
CAPSTAN MOTOR
FG
Zero cross
Mode select
Matrix/C.Cont
HU
HV
HW
HALL ELEMENTS
D702
D701
Quartz lock control
CF201
SN74LS04MEL
IC202 / IC203
SN74LS74AMEL
Q201
Regulator
Q901
Reset drive
Q917
Regulator
S718 (POWER)
Q601, 603
Switching
Q608
Regulator
D605, 606
Q609
Regulator
Q604
Regulator
Q606
Regulator
Q610
Regulator
Q605
Regulator
Q303
Regulator
D601~604
Stabilizer
Q925
D915, 916
Q602
Stabilizer
D611
Regulator
Q607
Power transformer
T601
AC IN

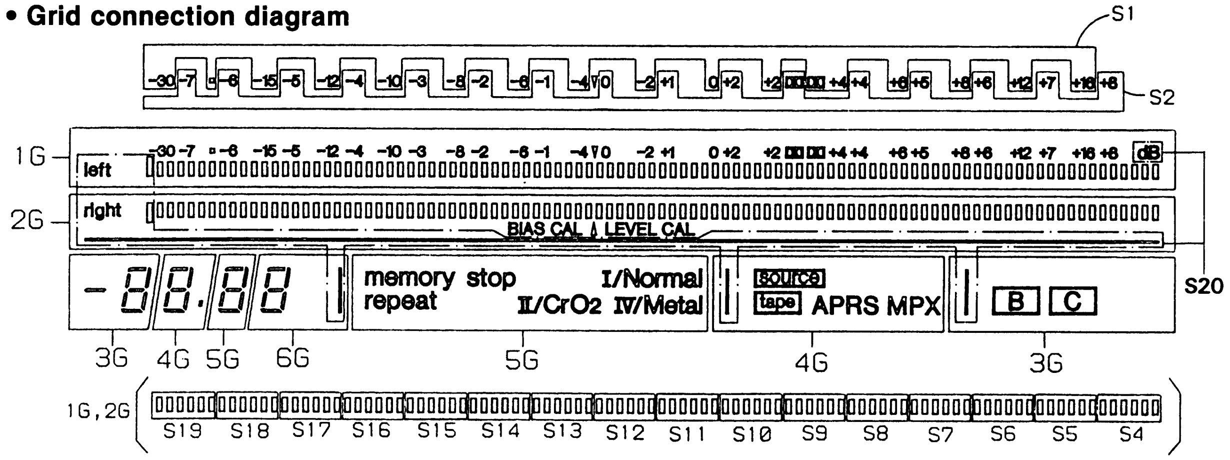
Notes

•——►Playback signal

•⟹Recording signal

■ INTERNAL CONNECTION OF FL

• Grid connection diagram


S1
S2
1G
2G
left
right
BIAS CAL
LEVEL CAL
dB
memory stop
repeat
I/Normal
II/CrO2
IV/Metal
source
tape
APRS MPX
B
C
S20
3G
4G
5G
6G
5G
4G
3G
1G, 2G
S19
S18
S17
S16
S15
S14
S13
S12
S11
S10
S9
S8
S7
S6
S5
S4

• Anode connection table

	1G	2G	3G	4G	5G	6G
S1	S1	LEVEL CAL	-	APRS	-	-
S2	S2	BIAS CAL	-	-	-	-
S3	▼	▲	-	-	-	-
S4	▮▮▮▮▮▮	▮▮▮▮▮▮	-	-	-	-
S5	▮▮▮▮▮▮	▮▮▮▮▮▮	-	-	-	-
S6	▮▮▮▮▮▮	▮▮▮▮▮▮	-	-	memory	-
S7	▮▮▮▮▮▮	▮▮▮▮▮▮	-	-	repeat	-
S8	▮▮▮▮▮▮	▮▮▮▮▮▮	-	tape	stop	-
S9	▮▮▮▮▮▮	▮▮▮▮▮▮	B	source	-	-
S10	▮▮▮▮▮▮	▮▮▮▮▮▮	C	-	I /Normal	-
S11	▮▮▮▮▮▮	▮▮▮▮▮▮	-	MPX	II / CrO$_2$	-
S12	▮▮▮▮▮▮	▮▮▮▮▮▮	—	▪	IV/Metal	-
S13	▮▮▮▮▮▮	▮▮▮▮▮▮	a	a	a	a
S14	▮▮▮▮▮▮	▮▮▮▮▮▮	b	b	b	b
S15	▮▮▮▮▮▮	▮▮▮▮▮▮	f	f	f	f
S16	▮▮▮▮▮▮	▮▮▮▮▮▮	g	g	g	g
S17	▮▮▮▮▮▮	▮▮▮▮▮▮	c	c	c	c
S18	▮▮▮▮▮▮	▮▮▮▮▮▮	e	e	e	e
S19	▮▮▮▮▮▮	▮▮▮▮▮▮	d	d	d	d
S20 (dB)	left ▮ dB	right ▮	▮	▮	-	▮

• Pin connection

PIN NO.	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	NP	NP	NP	NP	S19	S18	S17	S16	S15	S14	S13	S12	S11	S10	S9	S8	S7	S6	S5	S4	S3	S2	S1	NC	6G	5G	4G	3G	2G	1G	S20	NP	NP	NP	NP	NP	NP	NP	F1	F1

PIN NO.	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
CONNECTION	F2	F2	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP

SCHEMATIC DIAGRAM

(Parts list on pages 36~38, 44~46.)

(This schematic diagram may be modified at any time with development of new technology.)

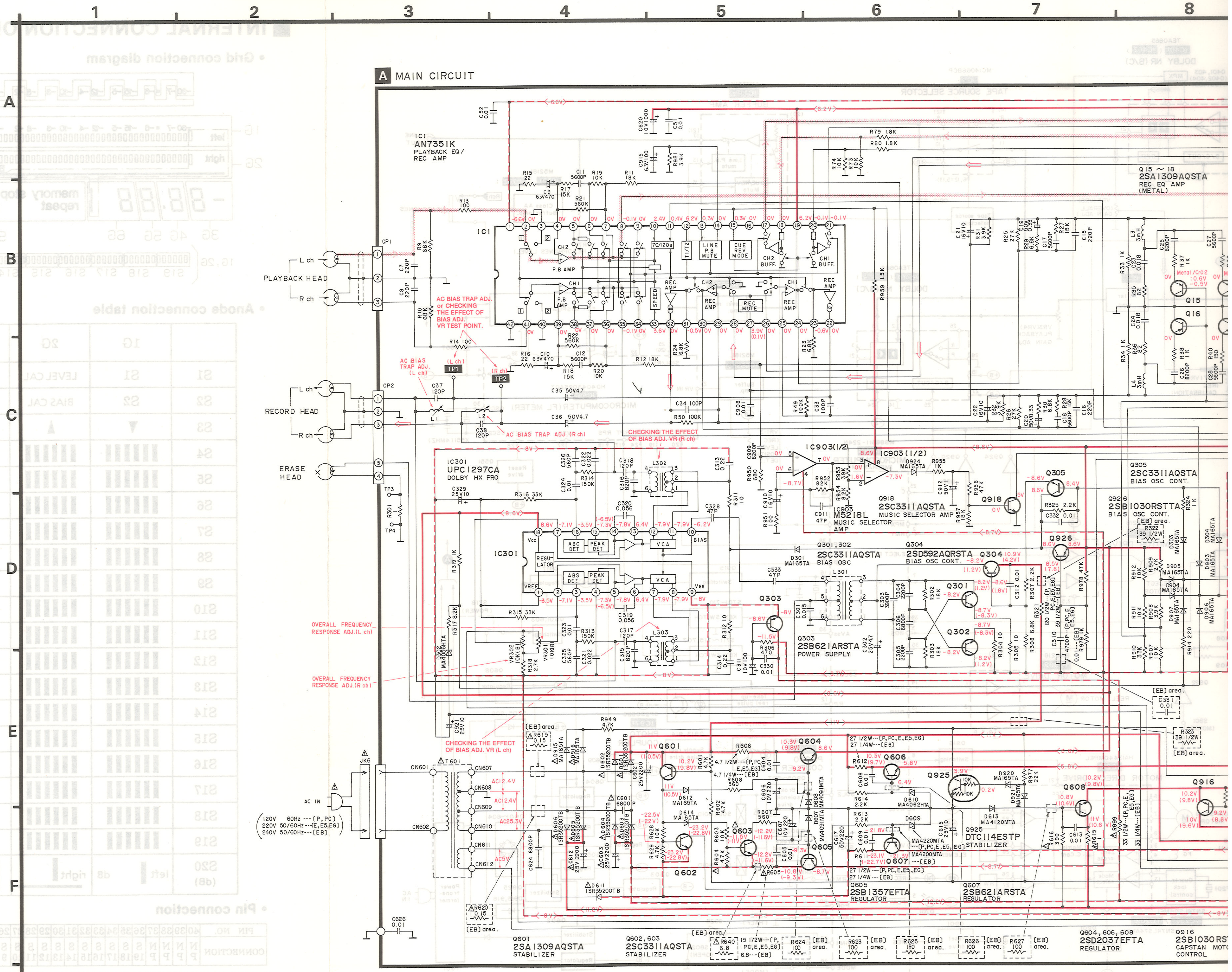
Notes:

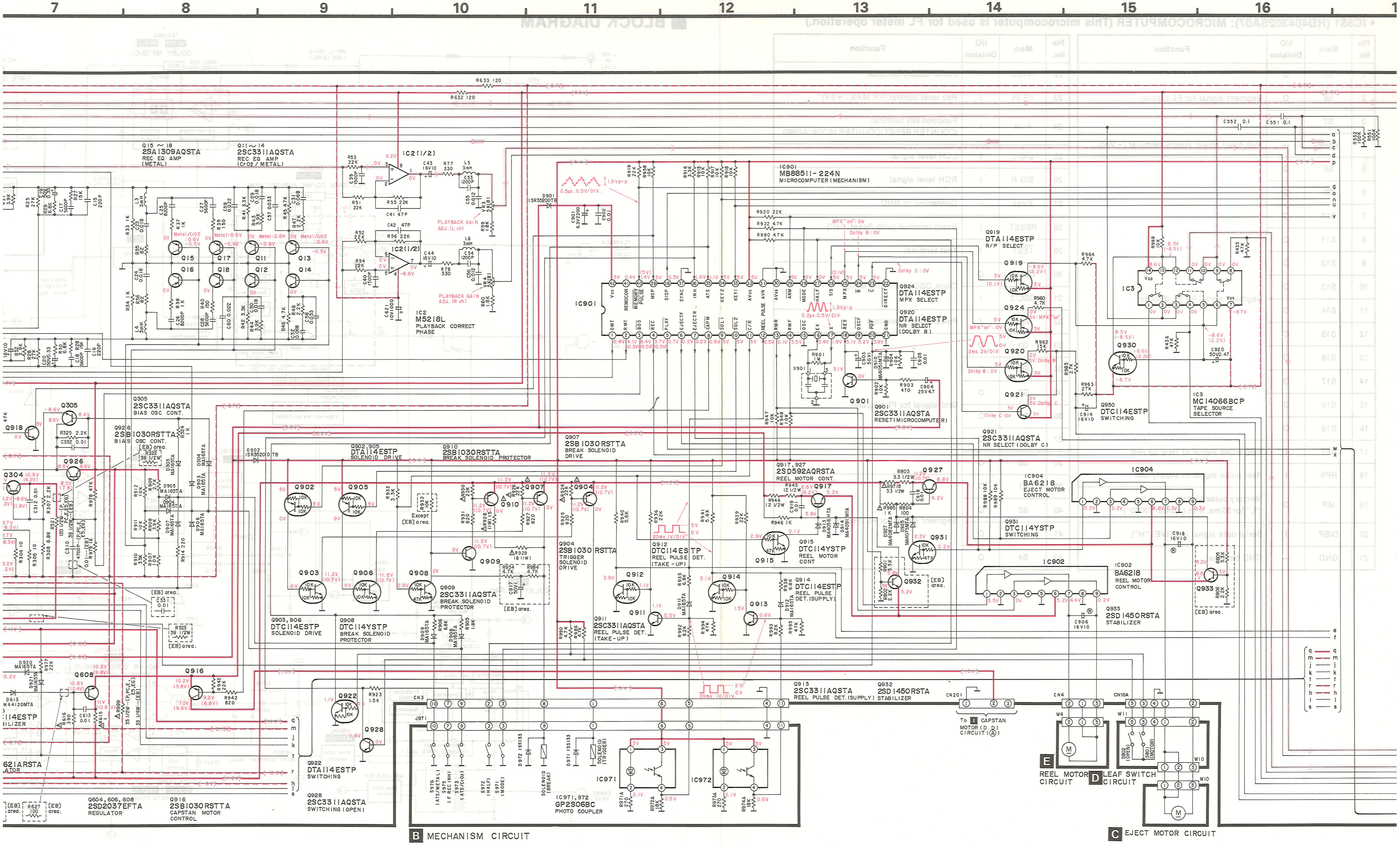
- **S551** : Monitor switch (monitor) in "off" position.
- **S701** : Stop switch (stop) in "off" position.
- **S702** : F.F. switch (ff) in "off" position.
- **S703** : Rew switch (rew) in "off" position.
- **S704** : Playback switch (Play) in "off" position.
- **S705** : Record switch (rec) in "off" position.
- **S706** : Pause switch (pause) in "off" position.
- **S707** : Dolby noise-reduction switch (Dolby NRC) in "off" position.
- **S708** : Dolby noise-reduction switch (Dolby NR B) in "off" position.
- **S709** : Multiplex filter switch (MPX filter) in "off" position.
- **S710** : Timer switch (timer) in "off" position.
- **S711** : Counter reset switch (counter reset) in "off" position.
- **S712** : Counter mode switch (counter mode) in "off" position.
- **S713** : Meter range switch (meter range) in "off" position.
- **S714** : Memory mode switch (memory repeat) in "off" position.
- **S715** : Memory mode switch (memory stop) in "off" position.
- **S716** : APRS switch (APRS) in "off" position.
- **S717** : Automatic-record-muting switch (auto rec mute) in "off" position.
- **S718** : Power switch (standby ⏻ /on) in "on" position.
- **S719** : Open/close switch (open/close) in "off" position.
- **S801** : Motor switch in "off" position. (Loading)
- **S802** : Open swtich in "off" position. (Loading)
- **S971** : Mode switch in "off" position.
- **S972** : Cassette half detection switch in "off" position.
- **S973** : ATS (CrO_2) switch in "off" position.
- **S975** : Rec Inhibit switch in "off" position.
- **S976** : ATS (Metal) switch in "off" position.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
  1 K=1,000 (Ω), 1 M=1,000 k (Ω)
- Capacity are in micro-farads (μF) unless specified otherwise.
- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
  ( ) ....Voltage values at record mode.
  For measurement us EVM.
- Important safety notice
  Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- (━━<+B>━━) indicates +B (bias).
- (■■■<–B>■■■) indicates –B (bias).
- (▒▒▒▒) indicates the flow of the playback signal.
- (⇨) indicates the flow of the record signal.

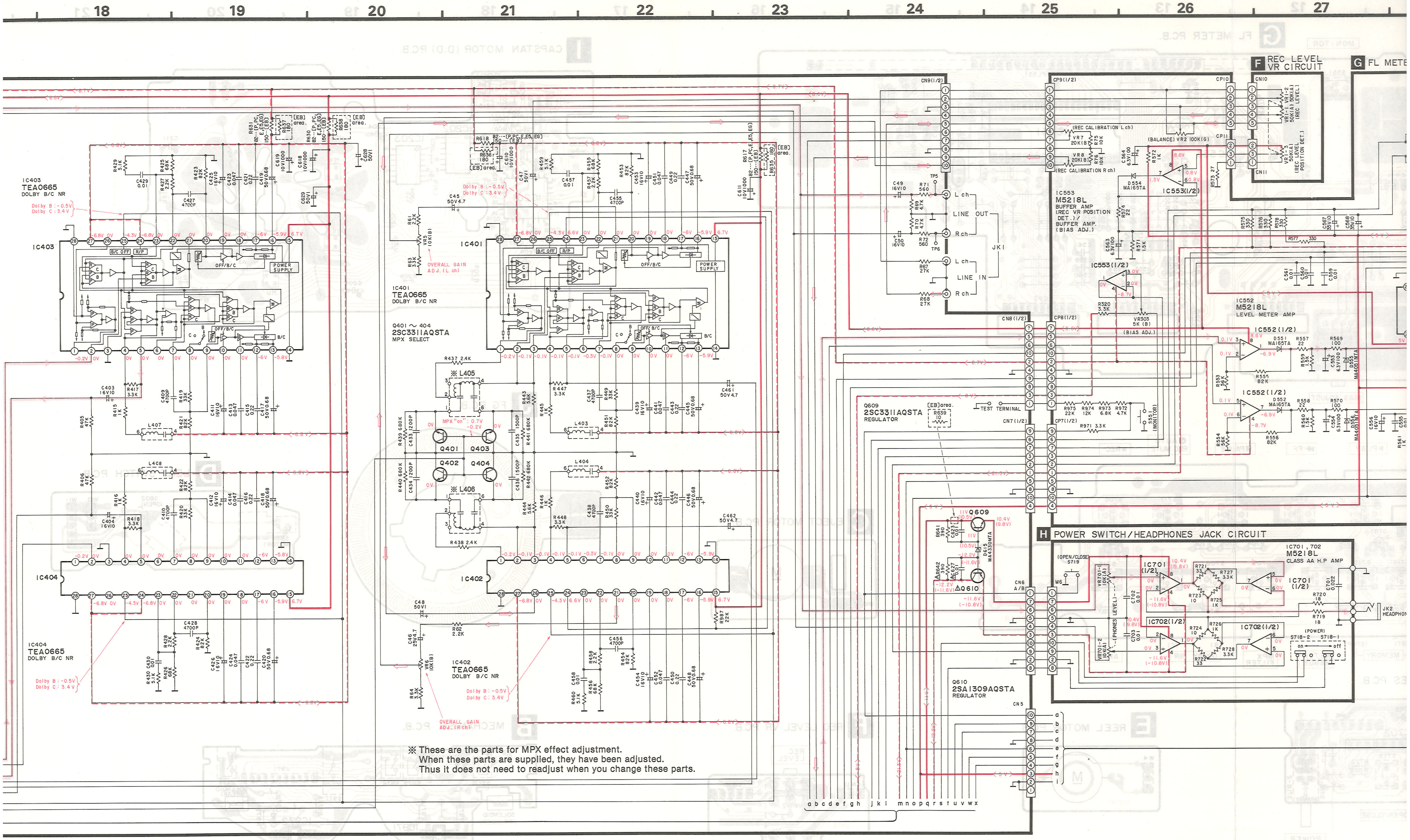
∗ Caution!

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

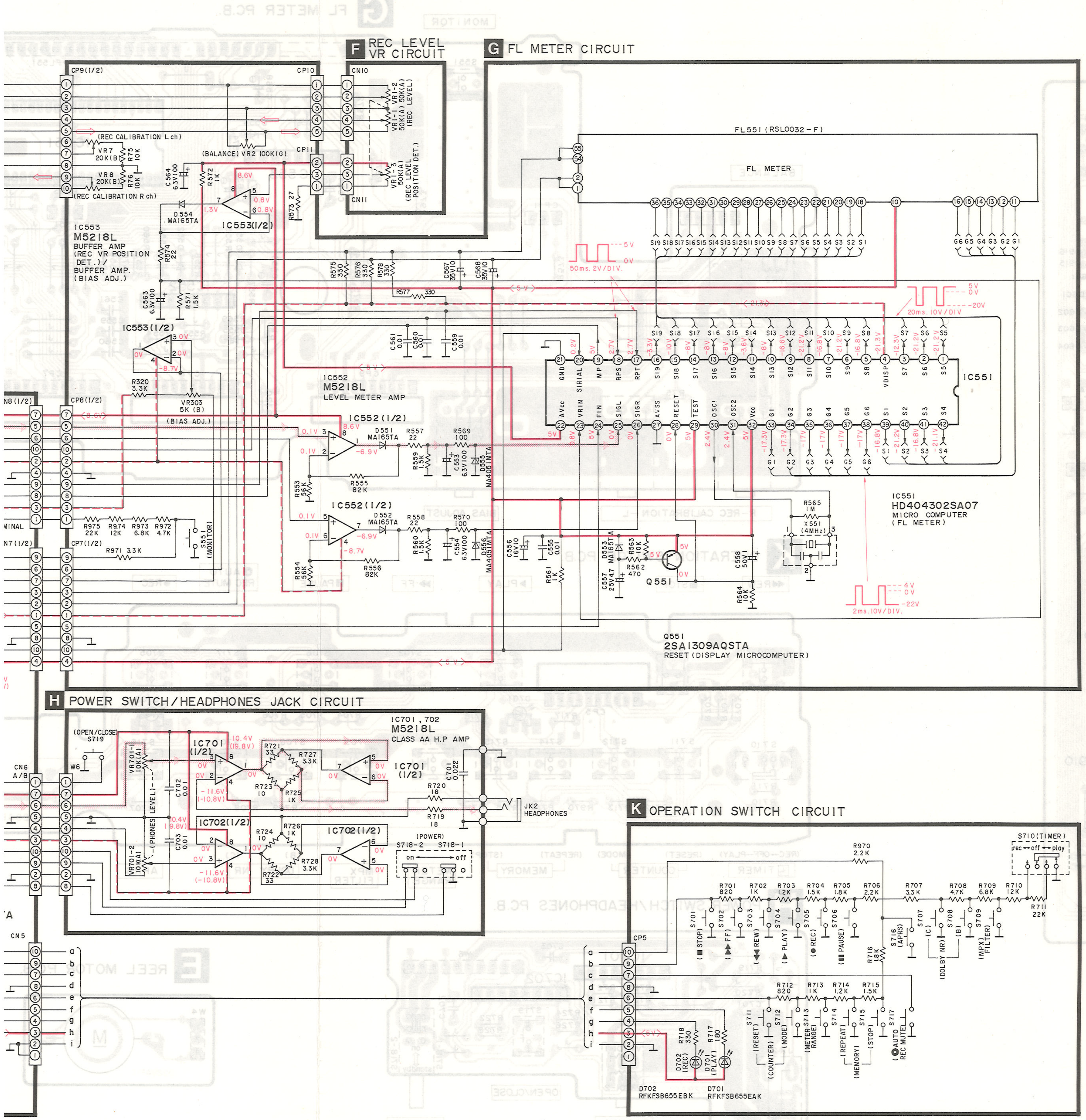
- ∗ Cover the parts boxes made of plastics with aluminum foil.
- ∗ Ground the soldering iron.
- ∗ Put a conductive mat on the work table.
- ∗ Do not touch the legs of IC or LSI with the fingers directly.

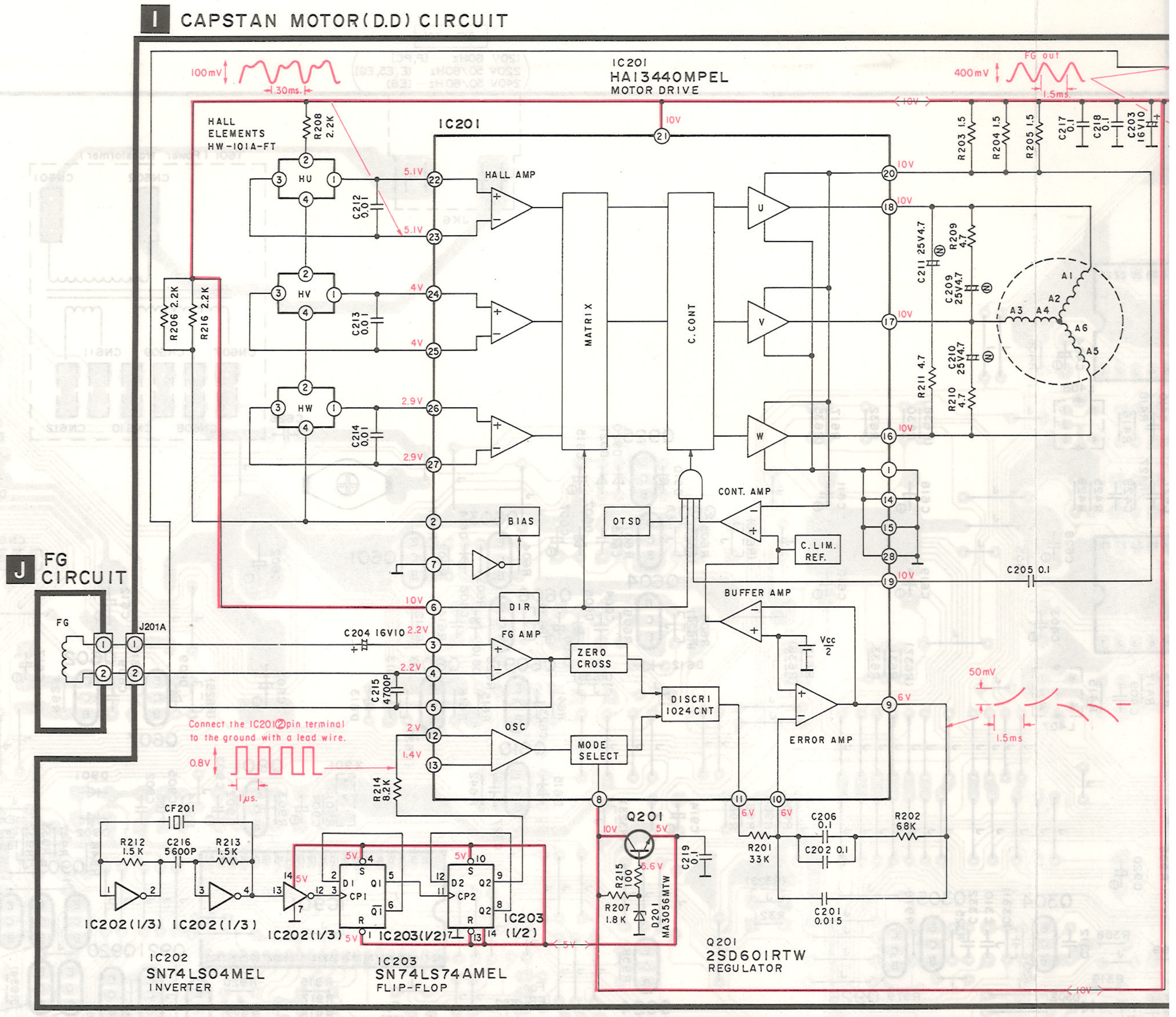

1
2
3
4
5
6
7
8
A
B
C
D
E
F
A MAIN CIRCUIT
IC1 AN7351K PLAYBACK EQ / REC AMP
PLAYBACK HEAD
L ch
R ch
RECORD HEAD
ERASE HEAD
CP1
CP2
TP1
TP2
TP3
TP4
AC BIAS TRAP ADJ. or CHECKING THE EFFECT OF BIAS ADJ. VR TEST POINT.
AC BIAS TRAP ADJ. (L ch)
AC BIAS TRAP ADJ. (R ch)
CHECKING THE EFFECT OF BIAS ADJ. VR (R ch)
CHECKING THE EFFECT OF BIAS ADJ. VR (L ch)
IC301 UPC1297CA DOLBY HX PRO
IC903(1/2)
IC903 M5218L MUSIC SELECTOR AMP
Q918 2SC3311AQSTA MUSIC SELECTOR AMP
Q301, 302 2SC3311AQSTA BIAS OSC
Q304 2SD592AQRSTA BIAS OSC CONT.
Q303 2SB621ARSTA POWER SUPPLY
Q305 2SC3311AQSTA BIAS OSC CONT.
Q926 2SB1030RSTTA BIAS OSC CONT.
Q15 ~ 18 2SA1309AQSTA REC EQ AMP (METAL)
OVERALL FREQUENCY RESPONSE ADJ.(L ch)
OVERALL FREQUENCY RESPONSE ADJ.(R ch)
AC IN
120V 60Hz ··· (P, PC)
220V 50/60Hz ··· (E, E5, EG)
240V 50/60Hz ··· (EB)
JK6
T601
CN601
CN602
CN607
CN608
CN609
CN610
CN611
CN612
Q601 2SA1309AQSTA STABILIZER
Q602, 603 2SC3311AQSTA STABILIZER
Q605 2SB1357EFTA REGULATOR
Q607 2SB621ARSTA REGULATOR
Q925 DTC114ESTP STABILIZER
Q604, 606, 608 2SD2037EFTA REGULATOR
Q916 2SB1030RS CAPSTAN MOTOR CONTROL
[EB] area.


7
8
9
10
11
12
13
14
15
16
Q15 ~ 18
2SA1309AQSTA
REC EQ AMP
(METAL)
Q11 ~ 14
2SC3311AQSTA
REC EQ AMP
(CrO2 / METAL)
Q15
Q16
Q17
Q18
Q11
Q12
Q13
Q14
IC2(1/2)
IC2(1/2)
IC2
M5218L
PLAYBACK CORRECT
PHASE
PLAYBACK GAIN
ADJ. (L ch)
PLAYBACK GAIN
ADJ. (R ch)
R633 120
R632 120
D901
1SR35200TB
IC901
MB88511-224N
MICROCOMPUTER (MECHANISM)
IC901
X901
Q901
2SC3311AQSTA
RESET (MICROCOMPUTER)
Q919
DTA114ESTP
R/P SELECT
Q924
DTA114ESTP
MPX SELECT
Q920
DTA114ESTP
NR SELECT
(DOLBY B)
Q921
2SC3311AQSTA
NR SELECT (DOLBY C)
Q930
DTC114ESTP
SWITCHING
IC3
MC14066BCP
TAPE SOURCE
SELECTOR
Q305
2SC3311AQSTA
BIAS OSC CONT.
Q926
2SB1030RSTTA
BIAS OSC CONT.
Q918
Q304
Q608
Q616
D902
1SR35200TB
Q902,905
DTA114ESTP
SOLENOID DRIVE
Q910
2SB1030RSTTA
BREAK SOLENOID PROTECTOR
Q907
2SB1030RSTTA
BREAK SOLENOID
DRIVE
Q902
Q905
Q907
Q904
Q909
Q903
Q906
Q908
Q909
2SC3311AQSTA
BREAK SOLENOID
PROTECTOR
Q903, 906
DTC114ESTP
SOLENOID DRIVE
Q908
DTC114YSTP
BREAK SOLENOID
PROTECTOR
Q904
2SB1030RSTTA
TRIGGER
SOLENOID
DRIVE
Q912
DTC114ESTP
REEL PULSE DET.
(TAKE-UP)
Q911
2SC3311AQSTA
REEL PULSE DET.
(TAKE-UP)
Q914
DTC114ESTP
REEL PULSE
DET. (SUPPLY)
Q913
Q915
DTC114YSTP
REEL MOTOR
CONT.
Q917,927
2SD592AQRSTA
REEL MOTOR CONT.
Q917
Q927
Q931
DTC114YSTP
SWITCHING
Q932
IC904
BA6218
EJECT MOTOR
CONTROL
IC902
BA6218
REEL MOTOR
CONTROL
Q933
2SD1450RSTA
STABILIZER
Q913
2SC3311AQSTA
REEL PULSE DET. (SUPPLY)
Q932
2SD1450RSTA
STABILIZER
Q922
DTA114ESTP
SWITCHING
Q928
2SC3311AQSTA
SWITCHING (OPEN)
Q604, 606, 608
2SD2037EFTA
REGULATOR
Q616
2SB1030RSTTA
CAPSTAN MOTOR
CONTROL
CN3
J971
CN201
To [I] CAPSTAN
MOTOR (D.D.)
CIRCUIT (Ⓐ)
CN4
W4
CN10A
W11
W10
IC971
IC972
IC971, 972
GP2S06BC
PHOTO COUPLER
S976 (ATS/METAL)
S975 (F REC INH)
S973 (ATS/CrO2)
S972 (HALF)
S971 (MODE)
SOLENOID (BREAK)
SOLENOID (TRIGGER)
S802 (OPEN)
S801 (MOTOR)
E
REEL MOTOR
CIRCUIT
D
LEAF SWITCH
CIRCUIT
C
EJECT MOTOR CIRCUIT
B
MECHANISM CIRCUIT
[EB] area.
Dolby B : 0V
Dolby C : 0V
MPX "on" : 0V
20ms. 1V/DIV
0.5μs. 0.5V/DIV.
1.9Vp-p
0.2μs. 0.5V/DIV
2ms. 2V/DIV
20ms. 1V/DIV


18
19
20
21
22
23
24
25
26
27
F REC LEVEL VR CIRCUIT
G FL METE
IC403
TEA0665
DOLBY B/C NR
Dolby B : -0.5V
Dolby C : 3.4V
IC404
TEA0665
DOLBY B/C NR
IC401
TEA0665
DOLBY B/C NR
IC402
TEA0665
DOLBY B/C NR
Q401 ~ 404
2SC3311AQSTA
MPX SELECT
Q401
Q402
Q403
Q404
※ L405
※ L406
L407
L408
L403
L404
MPX "on" : 0.7V
OVERALL GAIN ADJ. (L ch)
OVERALL GAIN ADJ. (R ch)
B/C OFF
R/P
OFF/B/C
POWER SUPPLY
[EB] area
CN9(1/2)
CP9(1/2)
CP10
CN10
CP11
CN11
(REC CALIBRATION L ch)
(REC CALIBRATION R ch)
VR7 20K(B)
VR8 20K(B)
(BALANCE) VR2 100K(G)
VR1-1 VR1-2 50K(A) 50K(A) (REC LEVEL)
VR1-3 50K(A) (REC LEVEL POSITION DET.)
IC553
M5218L
BUFFER AMP
(REC VR POSITION DET.)/
BUFFER AMP.
(BIAS ADJ.)
IC553(1/2)
D554 MA165TA
VR303 5K (B)
(BIAS ADJ.)
L ch
LINE OUT
R ch
L ch
LINE IN
R ch
JK1
TP5
TP6
IC552
M5218L
LEVEL METER AMP
IC552 (1/2)
D551 MA165TA
D552 MA165TA
CN8(1/2)
CP8(1/2)
CN7(1/2)
CP7(1/2)
TEST TERMINAL
(MONITOR)
Q609
2SC3311AQSTA
REGULATOR
Q610
2SA1309AQSTA
REGULATOR
D615 MA4330MTA
CN6 A/B
CN5
H POWER SWITCH/HEADPHONES JACK CIRCUIT
(OPEN/CLOSE) S719
W6
VR701-1 10K(A)
VR701-2 10K(A)
(PHONES LEVEL)
IC701
(1/2)
IC702(1/2)
IC701, 702
M5218L
CLASS AA H.P AMP
JK2 HEADPHONES
(POWER)
S718-2
S718-1
on
off
a b c d e f g h j k l m n o p q r s t u v w x

※ These are the parts for MPX effect adjustment.
When these parts are supplied, they have been adjusted.
Thus it does not need to readjust when you change these parts.

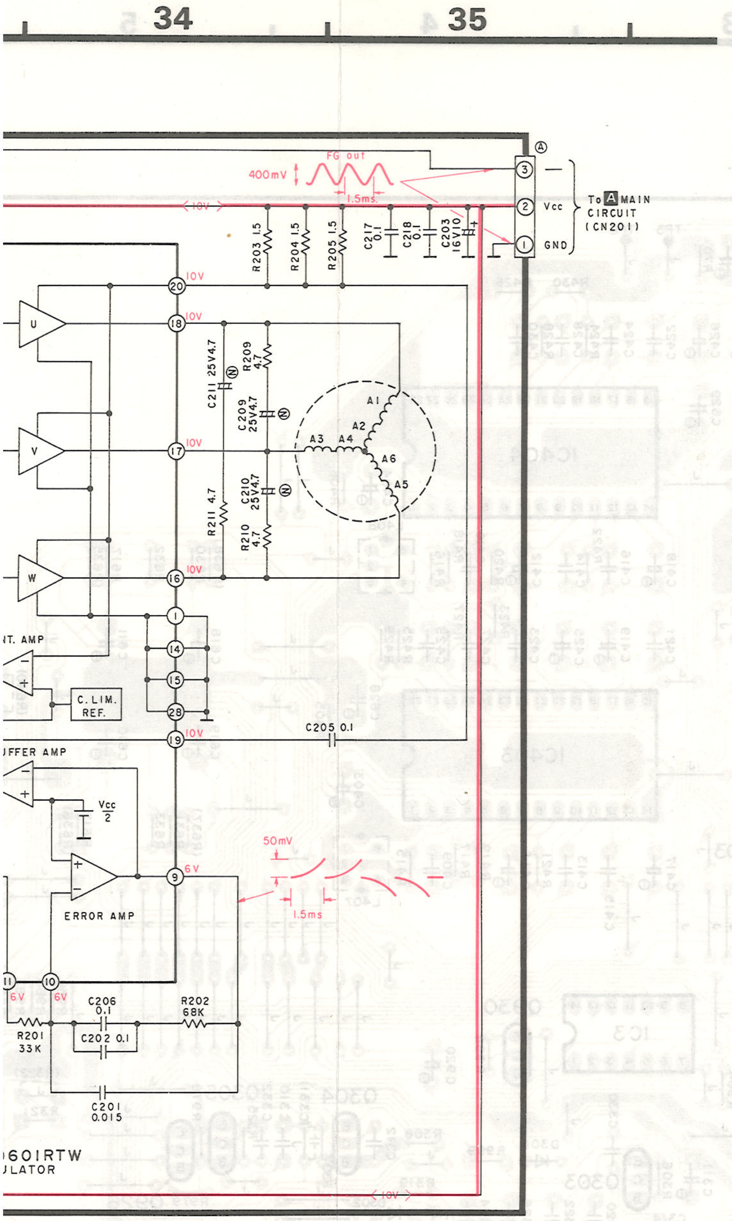

F REC LEVEL VR CIRCUIT
G FL METER CIRCUIT
FL551 (RSL0032-F)
FL METER
IC553 M5218L BUFFER AMP (REC VR POSITION DET.)/ BUFFER AMP. (BIAS ADJ.)
IC552 M5218L LEVEL METER AMP
IC551 HD404302SA07 MICRO COMPUTER (FL METER)
Q551 2SA1309AQSTA RESET (DISPLAY MICROCOMPUTER)
H POWER SWITCH/HEADPHONES JACK CIRCUIT
IC701, 702 M5218L CLASS AA H.P AMP
JK2 HEADPHONES
K OPERATION SWITCH CIRCUIT
D702 RFKFSB655EBK
D701 RFKFSB655EAK


I CAPSTAN MOTOR (D.D) CIRCUIT
J FG CIRCUIT
IC201 HA13440MPEL MOTOR DRIVE
HALL ELEMENTS HW-101A-FT
Connect the IC201 ⑳ pin terminal to the ground with a lead wire.
IC202 SN74LS04MEL INVERTER
IC203 SN74LS74AMEL FLIP-FLOP
Q201 2SD601RTW REGULATOR

• TROUBLESHO

Problem
1. The motor does n rotate.
2. The motor does n properly. (When p it stops at certai angles. Sometim does not rotate e power is ON.)
3. The motor is out control.
4. Abnormal wow

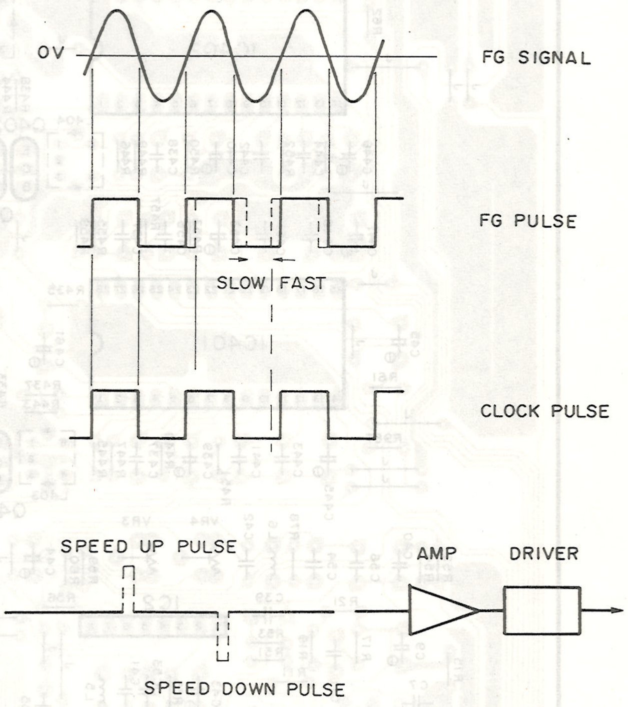
Note: Check the poi pin ② to GND the coil, heatin


34
35
Ⓐ
FG out
400mV
1.5ms.
<10V>
R203 1.5
R204 1.5
R205 1.5
C217 0.1
C218 0.1
C203 16V10
③
② Vcc
① GND
To A MAIN CIRCUIT (CN201)
⑳ 10V
⑱ 10V
⑰ 10V
⑯ 10V
U
V
W
C211 25V4.7 Ⓝ
R209 4.7
C209 25V4.7 Ⓝ
C210 25V4.7 Ⓝ
R211 4.7
R210 4.7
A1
A2
A3
A4
A5
A6
①
⑭
⑮
㉘
⑲ 10V
NT. AMP
C. LIM. REF.
C205 0.1
UFFER AMP
Vcc/2
50mV
1.5ms
⑨ 6V
ERROR AMP
⑪ 6V
⑩ 6V
C206 0.1
R202 68K
R201 33K
C202 0.1
C201 0.015
601RTW
LATOR
<10V>

TROUBLESHOOTING OF DIRECT DRIVE MOTOR

• OUTLINE OF THE DIRECT DRIVE MOTOR SYSTEM

The capstan motor is actuated by the DD motor digital servo system. The FG pulse is generated after the detection of the zero crosspoint, and the reference signal generated from the quartz oscillator is compared with this FG pulse. From this comparison, the accelerated and reduced speed pulses are generated, causing the driving coil to function.


0V
FG SIGNAL
FG PULSE
SLOW
FAST
CLOCK PULSE
SPEED UP PULSE
AMP
DRIVER
SPEED DOWN PULSE

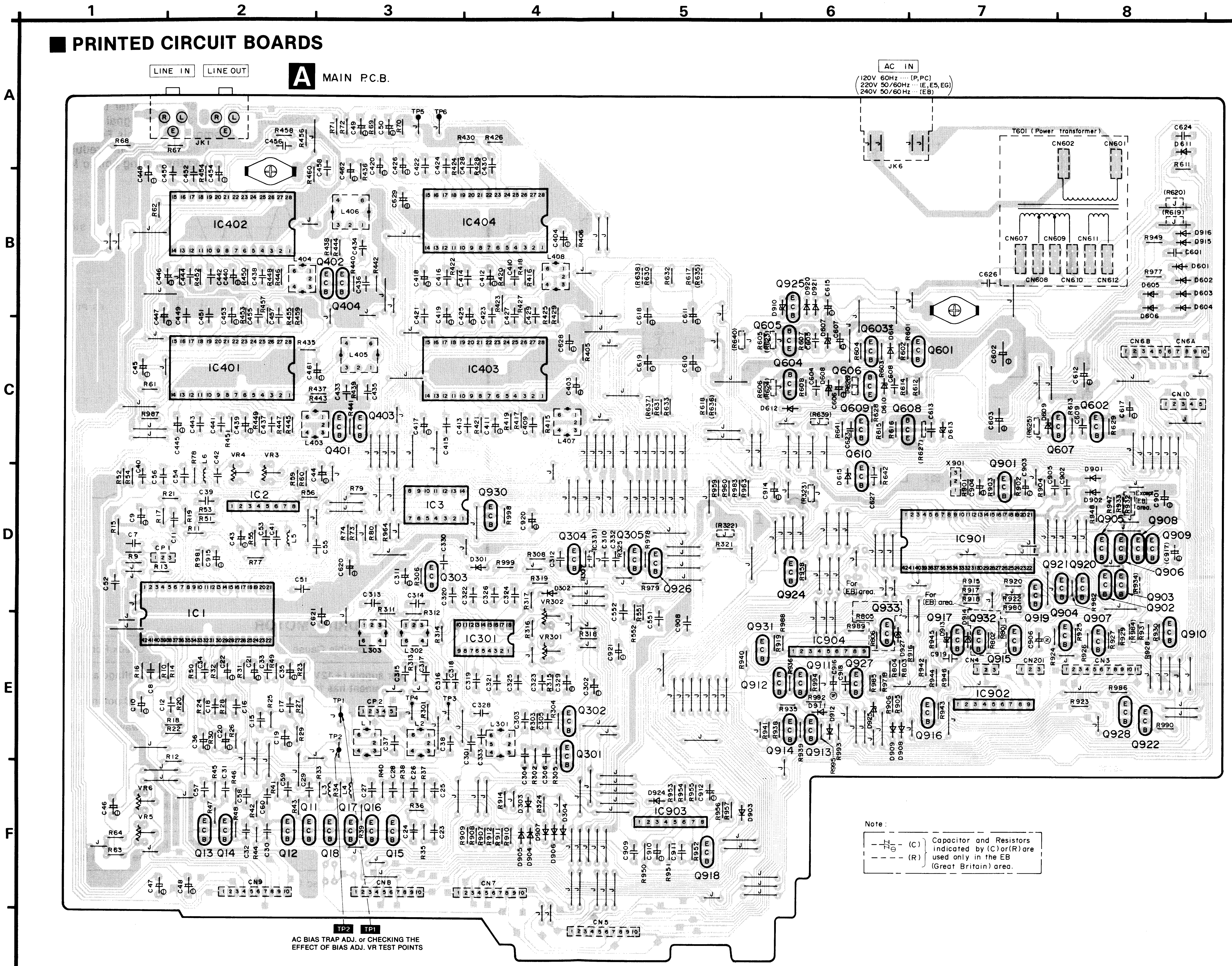
• TROUBLESHOOTING OF DIRECT DRIVE MOTOR

Problem	Possible Cause	Check Points
1. The motor does not rotate.	1. No power supply (+12V) 2. The Hall element has failed (Current does not flow). 3. The ceramic (or crystal) does not oscillate.	• Check the voltage applied to the connector. • Check the DC potential on IC pins ㉒~㉗. * Check the waveform of IC pin ⑬.
2. The motor does not rotate properly. (When pressed, it stops at certain angles. Sometimes it does not rotate even if power is ON.)	1. The coil is broken or not properly soldered. 2. Output of the Hall element is not proper.	* Check the conductance of the coil. If normal, the resistances between IC pins ⑯~⑰, ⑰~⑱, ⑯~⑱ will reach 20 ohms. • Check the waveform of IC pins ㉒~㉗.
3. The motor is out of control.	1. The FG coil is broken.	• Check the waveform of IC pin ⑤. • Check if the FG coil is broken.
4. Abnormal wow	1. Same as those described for problem 2.	

Note: Check the points marked with an asterisk (*) by removing the DD motor control P.C.B. and then connecting IC pin ② to GND with a lead wire. (After the DD motor control P.C.B. is removed, current will start flowing through the coil, heating the IC.)

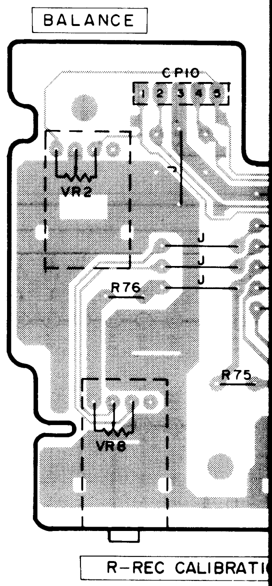
PRINTED CIRCUIT BOARDS

A MAIN P.C.B.

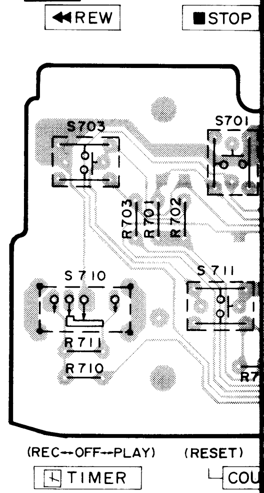

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
LINE IN
LINE OUT
JK1
AC IN
120V 60Hz ···· (P,PC)
220V 50/60Hz ··· (E,E5,EG)
240V 50/60Hz ··· (EB)
JK6
T601 (Power transformer)
CN602
CN601
CN607
CN609
CN611
CN608
CN610
CN612
IC402
IC404
IC401
IC403
IC2
IC3
IC1
IC301
IC901
IC904
IC902
IC903
L406
L405
L404
L408
L403
L407
L303
L302
L301
VR4
VR3
VR302
VR301
VR6
VR5
TP1
TP2
TP3
TP4
TP5
TP6
CP1
CP2
CN9
CN8
CN7
CN5
CN4
CN201
CN3
CN6B
CN6A
CN10
X901
For (EB) area.
Except (EB) area.

Note :
(C) (R) Capacitor and Resistors indicated by (C) or (R) are used only in the EB (Great Britain) area.

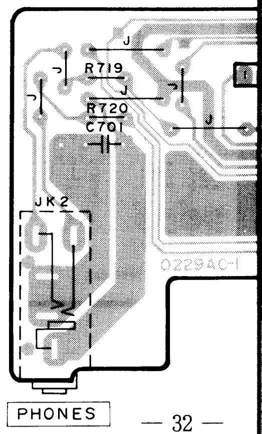
TP2 TP1
AC BIAS TRAP ADJ. or CHECKING THE EFFECT OF BIAS ADJ. VR TEST POINTS

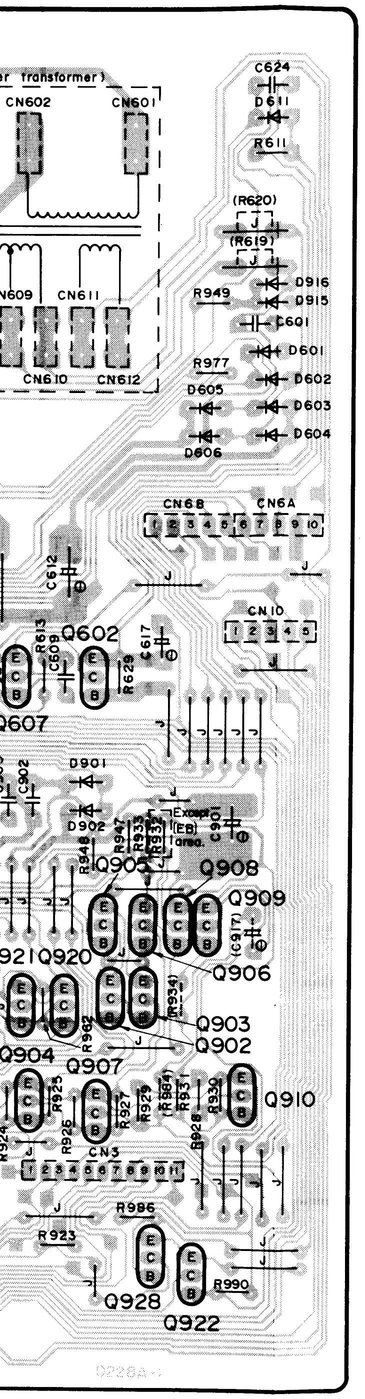

BALANCE
CP10
VR2
R76
R75
VR8
R-REC CALIBRATI

K OPERATION S

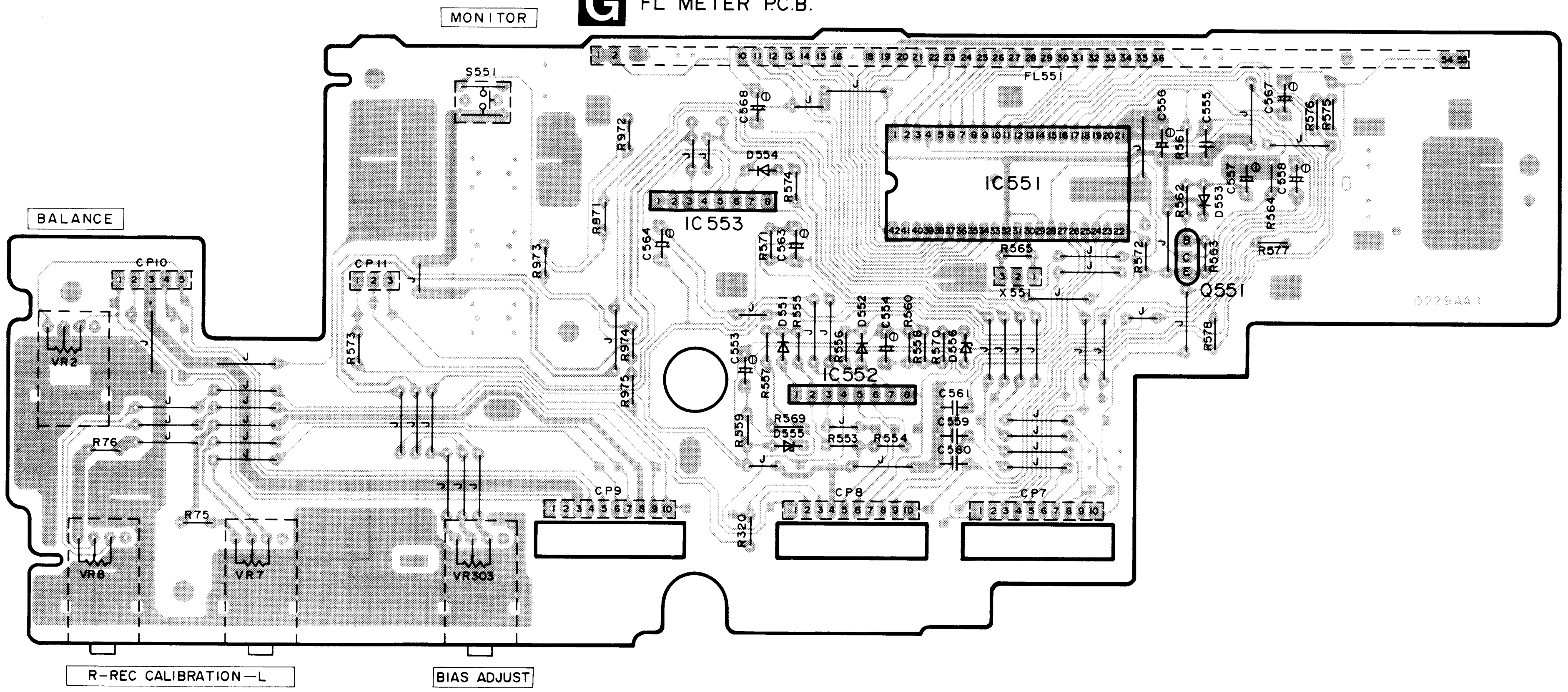

◀◀REW
■STOP
S703
S701
R703
R701
R702
S710
S711
R711
R710
(REC--OFF--PLAY)
(RESET)
TIMER
COU

H POWER SWITC

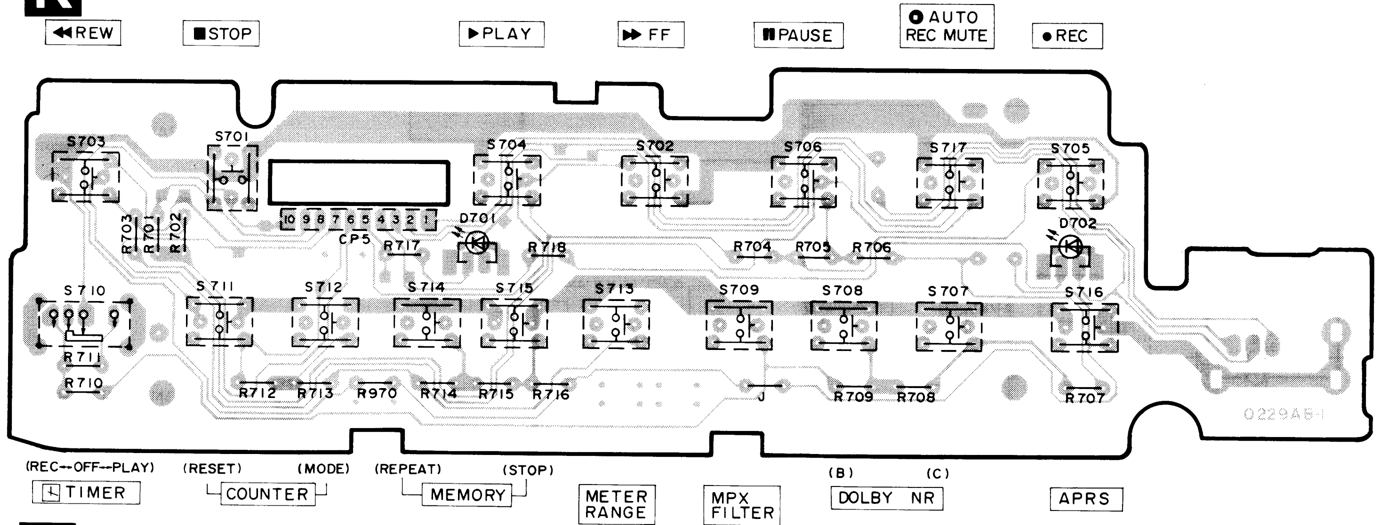

R719
R720
C701
JK2
PHONES


r transformer)
CN602
CN601
C624
D611
R611
(R620)
(R619)
R949
D916
D915
C601
D601
R977
D605
D602
D603
D604
D606
CN610
CN612
CN609
CN611
CN6B
CN6A
C612
CN10
Q602
Q607
R629
C617
D901
C902
D902
Q905
Q908
Q909
Q906
Q920
Q903
Q902
Q904
Q907
Q910
CN3
R986
R923
Q928
Q922
R990
0228A-1

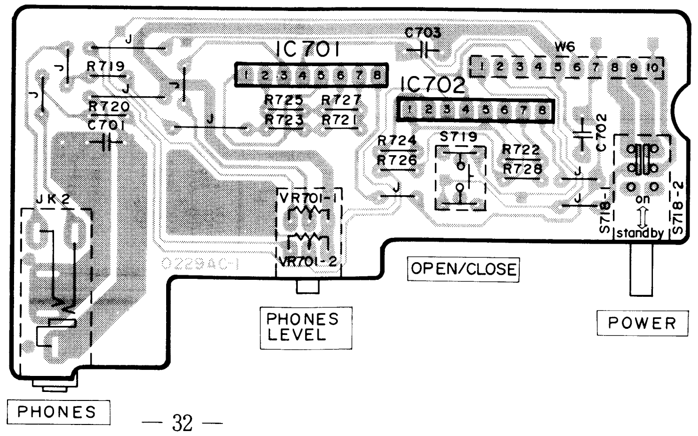
G FL METER P.C.B.


MONITOR
S551
FL551
IC551
IC553
IC552
Q551
X551
BALANCE
CP10
CP11
CP9
CP8
CP7
VR2
VR8
VR7
VR303
R76
R75
R-REC CALIBRATION-L
BIAS ADJUST
0229AA-1

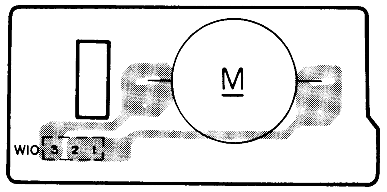
K OPERATION SWITCH P.C.B.


◀◀REW
■STOP
▶PLAY
▶▶FF
❚❚PAUSE
● AUTO REC MUTE
●REC
S703
S701
S704
S702
S706
S717
S705
CP5
D701
D702
S710
S711
S712
S714
S715
S713
S709
S708
S707
S716
(REC--OFF--PLAY)
TIMER
(RESET)
(MODE)
COUNTER
(REPEAT)
(STOP)
MEMORY
METER RANGE
MPX FILTER
(B)
(C)
DOLBY NR
APRS
0229AB-1

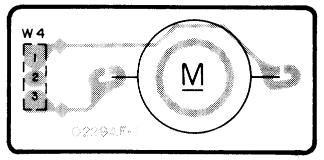
H POWER SWITCH/HEADPHONES P.C.B.


IC701
IC702
C703
W6
S719
JK2
VR701-1
VR701-2
S718
on
standby
OPEN/CLOSE
PHONES LEVEL
POWER
PHONES
0229AC-1

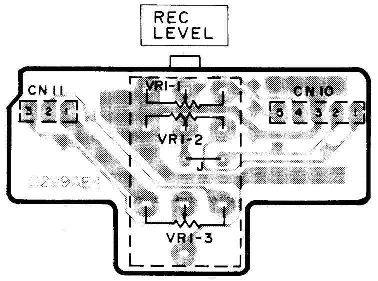
C EJECT MOTOR P.C.B.



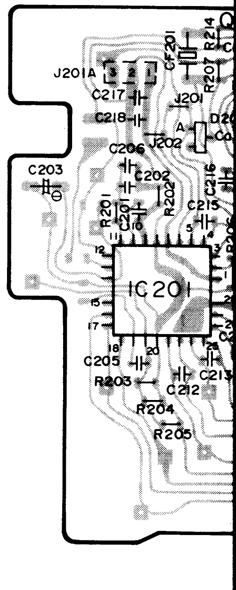
E REEL MOTOR P.C.B.


W4
M
0229AF-1

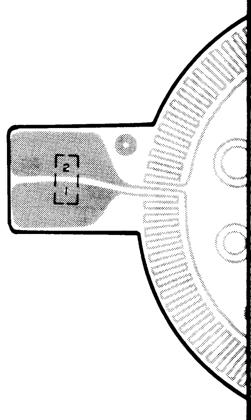
F REC LEVEL VR P.C.B.


REC LEVEL
CN11
CN10
VR1-1
VR1-2
VR1-3
0229AE-1

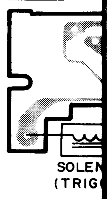
I CAPSTAN M


J201A
IC201
C203
C205
R204
R205

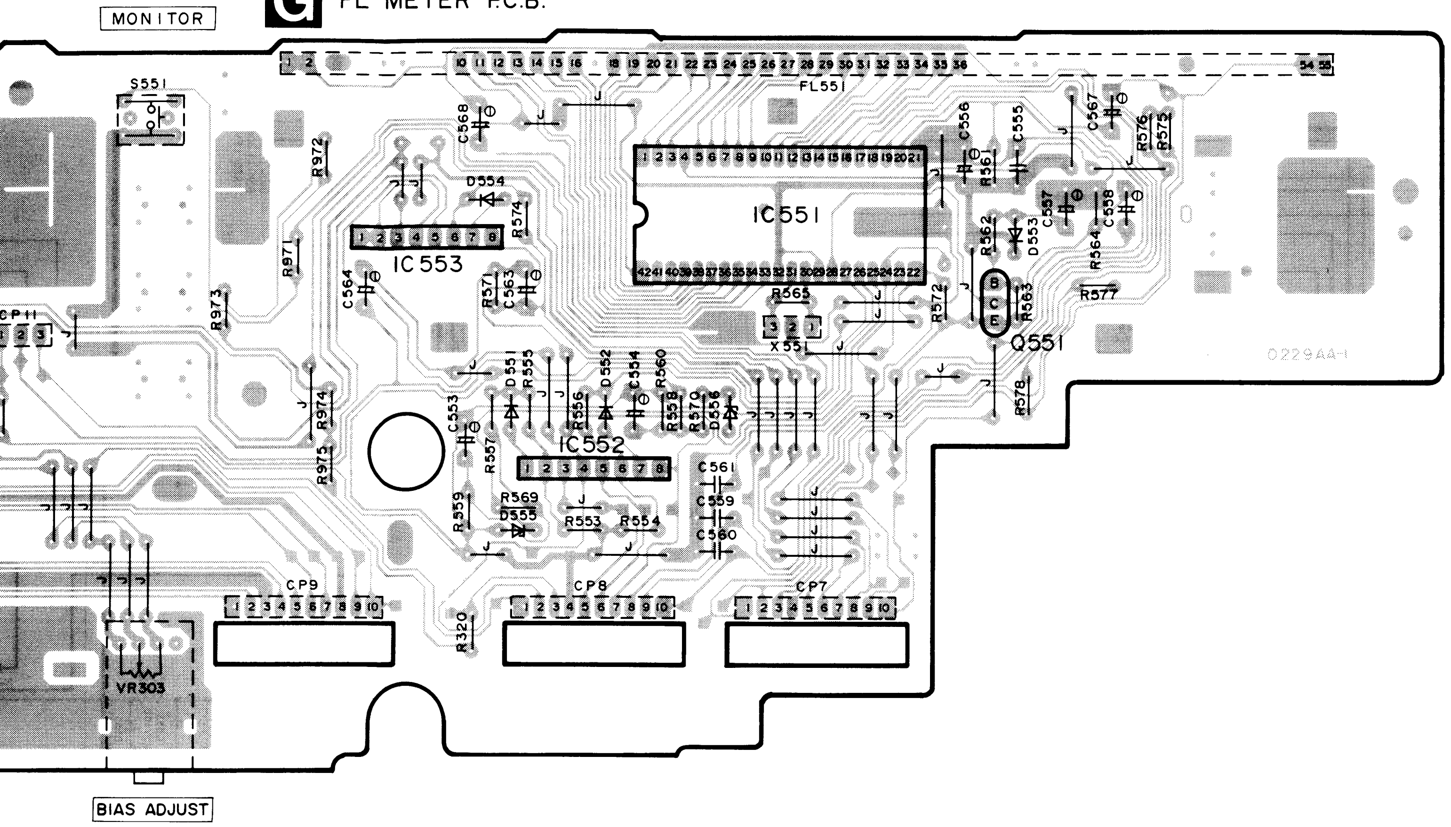
J F



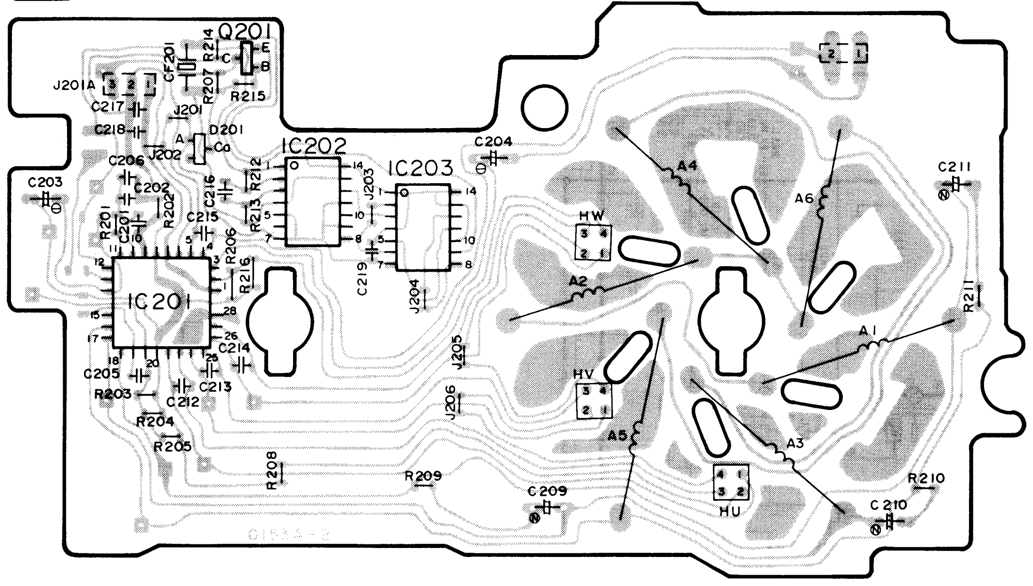
B M

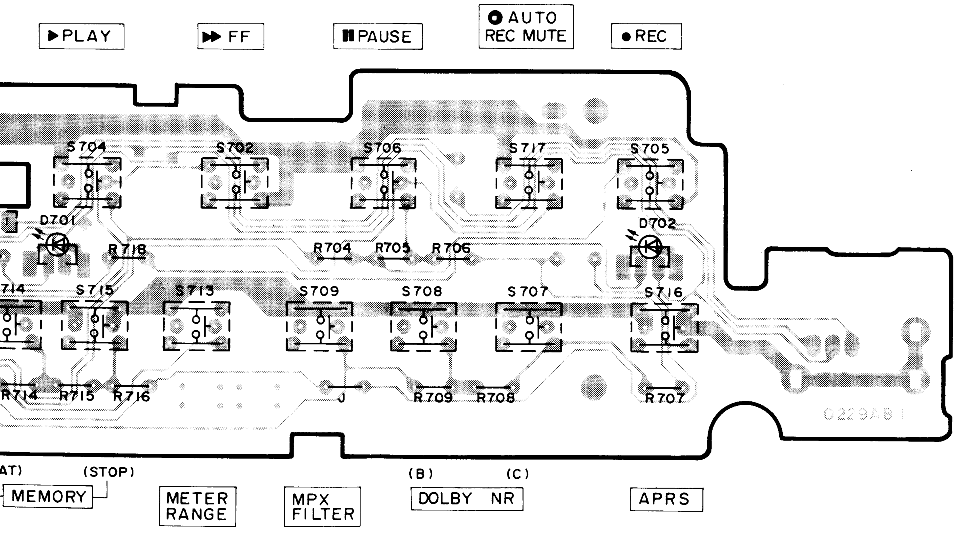


G FL METER P.C.B.

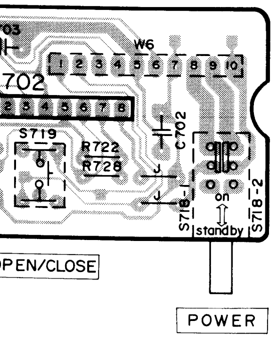

MONITOR
S551
FL551
IC551
IC552
IC553
Q551
X551
CP11
CP9
CP8
CP7
VR303
BIAS ADJUST
0229AA-1

I CAPSTAN MOTOR (D.D) P.C.B.

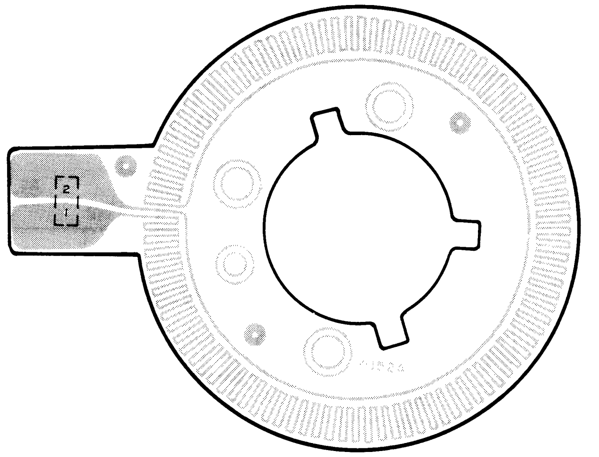

Q201
IC201
IC202
IC203
D201
J201A
HW
HV
HU
A1
A2
A3
A4
A5
A6


▶PLAY
▶▶FF
■PAUSE
● AUTO REC MUTE
●REC
S704
S702
S706
S717
S705
D701
D702
S715
S713
S709
S708
S707
S716
0229AB-1
MEMORY
(STOP)
METER RANGE
MPX FILTER
(B) (C)
DOLBY NR
APRS

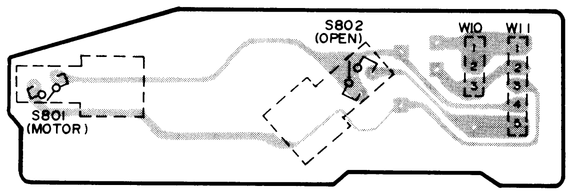
ES P.C.B.


W6
S719
R722
R728
C702
S718-1
S718-2
on
standby
OPEN/CLOSE
POWER

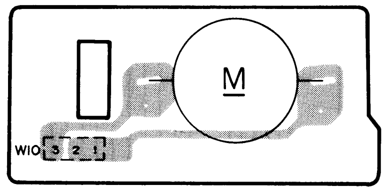
J FG P.C.B.



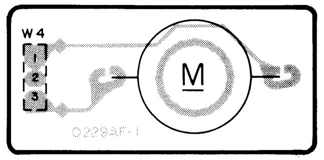
D LEAF SWITCH P.C.B.


S802 (OPEN)
W10
W11
S801 (MOTOR)

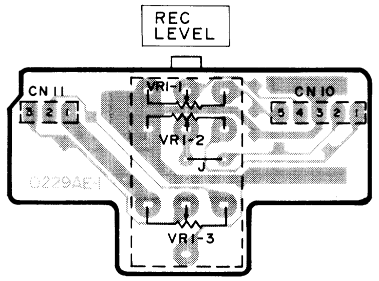
C EJECT MOTOR P.C.B.



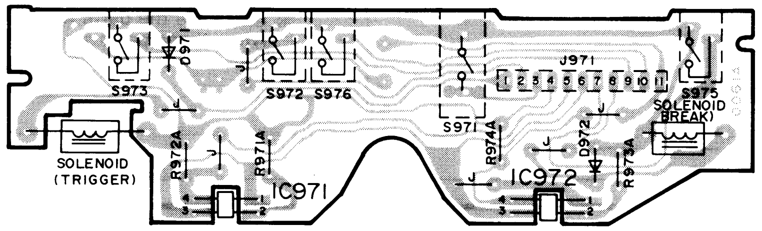
E REEL MOTOR P.C.B.


W4
M
0229AF-1

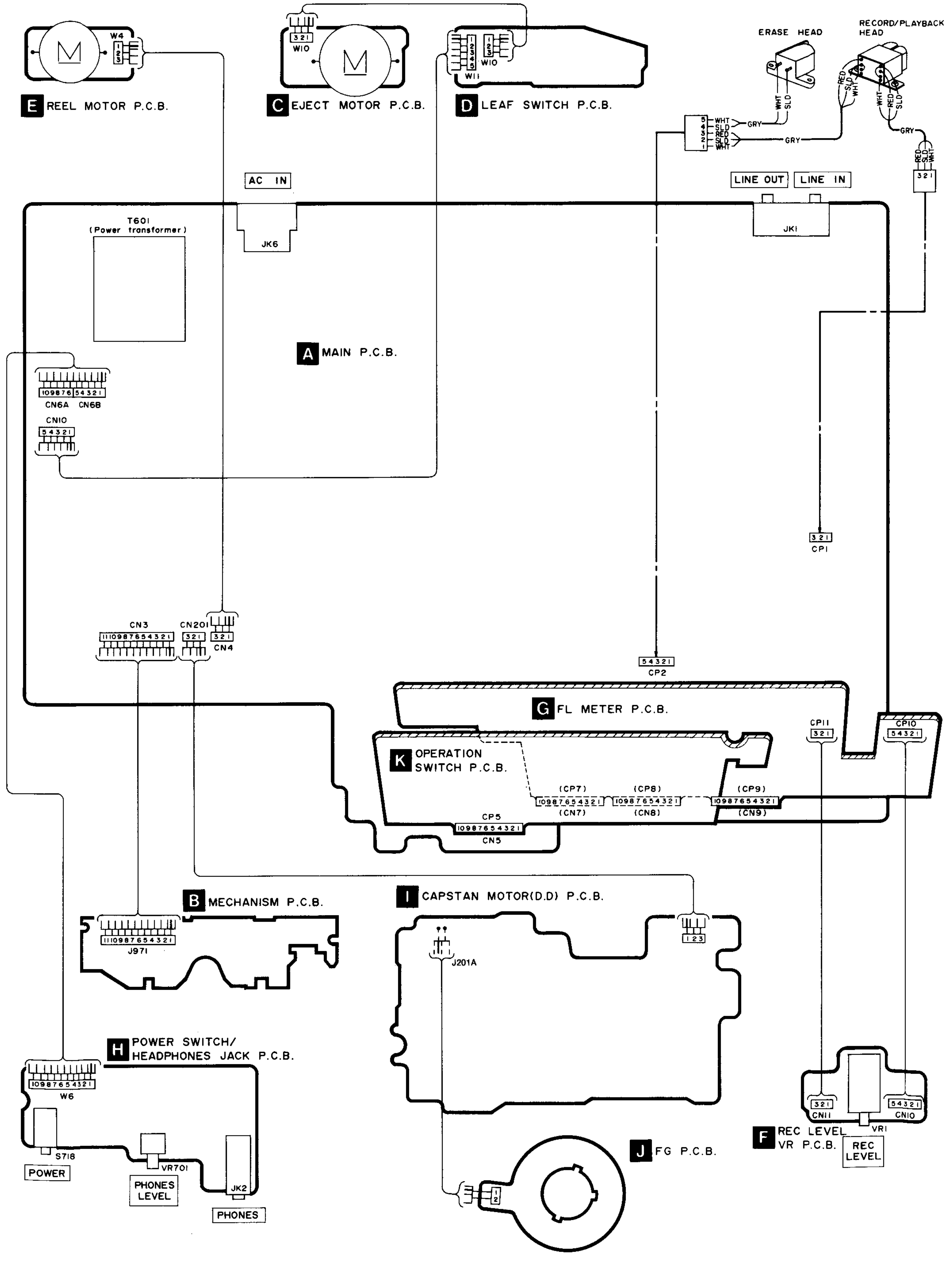
F REC LEVEL VR P.C.B.


REC LEVEL
CN11
CN10
VR1-1
VR1-2
VR1-3
0229AE-1

B MECHANISM P.C.B.


S973
S972
S976
S971
S975
J971
D971
D972
IC971
IC972
SOLENOID (TRIGGER)
SOLENOID (BREAK)

WIRING CONNECTION DIAGRAM


W4
E REEL MOTOR P.C.B.
W10
C EJECT MOTOR P.C.B.
W10
W11
D LEAF SWITCH P.C.B.
ERASE HEAD
RECORD/PLAYBACK HEAD
WHT
SLD
RED
GRY
AC IN
LINE OUT
LINE IN
JK6
JK1
T601 (Power transformer)
A MAIN P.C.B.
CN6A
CN6B
CN10
CP1
CN3
CN201
CN4
CP2
G FL METER P.C.B.
CP11
CP10
K OPERATION SWITCH P.C.B.
(CP7)
(CN7)
(CP8)
(CN8)
(CP9)
(CN9)
CP5
CN5
B MECHANISM P.C.B.
J971
I CAPSTAN MOTOR(D.D) P.C.B.
J201A
H POWER SWITCH/ HEADPHONES JACK P.C.B.
W6
S718
POWER
VR701
PHONES LEVEL
JK2
PHONES
J FG P.C.B.
CN11
CN10
VR1
F REC LEVEL VR P.C.B.
REC LEVEL

REPLACEMENT PARTS LIST

Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC1	AN7351K	IC, PLAYBACK EQ. /MIC AMP	
IC2	M5218L	IC, PLAYBACK CORRECT PHASE	
IC3	MC14066BCP	IC, TAPE SOURCE SELECTOR	
IC201	HA13440MPEL	IC, MOTOR DRIVE	
IC202	SN74LS04MEL	IC, INVERTER	
IC203	SN74LS74AMEL	IC, FLIP-FLOP	
IC301	UPC1297CA	IC, DOLBY HX PRO	
IC401, 402	TEA0665	IC, DOLBY B/C NR	
IC403, 404	TEA0665	IC, DOLBY B/C NR	
IC551	HD404302SA07	IC, MICROCOMPUTER;FL METER	
IC552	M5218L	IC, LEVEL METER AMP	
IC553	M5218L	IC, BUFFER AMP	
IC701, 702	M5218L	IC, Class AA : H.P. AMP	
IC901	MB88511-224N	IC, MICROCOMPUTER;MECHANICAL	
IC902	BA6218	IC, REEL MOTOR CONTROL	
IC903	M5218L	IC, MUSIC SELECTOR AMP	
IC904	BA6218	IC, EJECT MOTOR CONTROL	
IC971, 972	GP2S06BC	IC, PHOTO COUPLER	
		TRANSISTOR(S)	
Q11-14	2SC3311AQSTA	TRANSISTOR	
Q15-18	2SA1309AQSTA	TRANSISTOR	
Q201	2SD601RTW	TRANSISTOR	
Q301, 302	2SC3311AQSTA	TRANSISTOR	
Q303	2SB621ARSTA	TRANSISTOR	
Q304	2SD592A	TRANSISTOR	
Q305	2SC3311AQSTA	TRANSISTOR	
Q401-404	2SC3311AQSTA	TRANSISTOR	
Q551	2SA1309AQSTA	TRANSISTOR	
Q601	2SA1309AQSTA	TRANSISTOR	
Q602	2SC3311AQSTA	TRANSISTOR	
Q603	2SC3311AQSTA	TRANSISTOR	⚠
Q604	2SD2037EFTA	TRANSISTOR	
Q605	2SB1357EFTA	TRANSISTOR	
Q606	2SD2037EFTA	TRANSISTOR	
Q607	2SB621ARSTA	TRANSISTOR	
Q608	2SD2037EFTA	TRANSISTOR	
Q609	2SC3311AQSTA	TRANSISTOR	
Q610	2SA1309AQSTA	TRANSISTOR	⚠
Q901	2SC3311AQSTA	TRANSISTOR	
Q902	DTA114ESTP	TRANSISTOR	
Q903	DTC114ESTP	TRANSISTOR	
Q904	2SB1030RSTTA	TRANSISTOR	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
Q905	DTA114ESTP	TRANSISTOR	
Q906	DTC114ESTP	TRANSISTOR	
Q907	2SB1030RSTTA	TRANSISTOR	⚠
Q908	DTC114YSTP	TRANSISTOR	
Q909	2SC3311AQSTA	TRANSISTOR	
Q910	2SB1030RSTTA	TRANSISTOR	⚠
Q911	2SC3311AQSTA	TRANSISTOR	
Q912	DTC114ESTP	TRANSISTOR	
Q913	2SC3311AQSTA	TRANSISTOR	
Q914	DTC114ESTP	TRANSISTOR	
Q915	DTC114YSTP	TRANSISTOR	
Q916	2SB1030RSTTA	TRANSISTOR	
Q917	2SD592A	TRANSISTOR	
Q918	2SC3311AQSTA	TRANSISTOR	
Q919, 920	DTA114ESTP	TRANSISTOR	
Q921	2SC3311AQSTA	TRANSISTOR	
Q922	DTA114ESTP	TRANSISTOR	
Q924	DTA114ESTP	TRANSISTOR	
Q925	DTC114ESTP	TRANSISTOR	
Q926	2SB1030RSTTA	TRANSISTOR	
Q927	2SD592A	TRANSISTOR	
Q928	2SC3311AQSTA	TRANSISTOR	
Q930	DTC114ESTP	TRANSISTOR	
Q931	DTC114YSTP	TRANSISTOR	
Q932, 933	2SD1450RSTA	TRANSISTOR	(EB)
		DIODE(S)	
D201	MA3056MTW	DIODE	
D301	MA165TA	DIODE	
D302	MA4056H	DIODE	
D303, 304	MA165TA	DIODE	
D551-554	MA165TA	DIODE	
D555, 556	MA4051MTA	DIODE	
D601-606	1SR35200TB	DIODE	⚠
D607, 608	MA4091MTA	DIODE	
D609	MA4220	DIODE	(P, PC, E, E5, EG)
D609	MA4200M	DIODE	(EB)
D610	MA4062HTA	DIODE	
D611	1SR35200TB	DIODE	⚠
D612	MA165TA	DIODE	
D613	MA4120M	DIODE	
D614	MA165TA	DIODE	
D615	MA4330MTA	DIODE	
D701	RFKFSB655EAK	L. E. D. ASS'Y	
D702	RFKFSB655EBK	L. E. D. ASS'Y	
D901, 902	1SR35200TB	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
		JACK(S)	
JK1	SJF3069N	TERMINAL BOARD	
JK2	SJJD19	JACK, HEADPHONES	
JK6	SJS9236	AC INLET	(E, E5, EB, EG)⚠
JK6	SJSD16	AC INLET	(P, PC)⚠
		CERAMIC FILTER(S)	
CF201	RSXA3M74S01	CERAMIC FILTER	

Ref. No.	Part No.	Part Name & Description	Remarks
		JAMPER(S)	
J201-206	ERJ6GEY0R00V	CHIP JAMPER	

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST	
101	QHQ1361A	SCREW	
102	SJH96-1	E HEAD	
103	RHE5201ZA	SCREW	
104	RBR4CY003-C	R/P HEAD	
105	QBC1278A	SPRING	
106	RMX0014	SPACER	
107	RMR0184	HEAD SPACER	
108	XTN2+5F	SCREW	
109	REX0092	LEAD WIRE BLOCK	
110	RXR0001	REEL TABLE	
111	RUW139ZA	SPRING	
112	RMA0047A	HEAD BASE	
113	RXQ0078	MAIN ROD ASS'Y	
114	RMM0012-2	EJECT ROD(L)	
115	RME0018-1	SPRING	
116	RUB502Z	LEVER	
117	RME0020	SPRING	
118	RXL0007	BRAKE LEVER	
119	RUW142ZA	SPRING	
120	RXP0004	PINCH ROLLER ARM	
120-1	RUW140ZB	SPRING	
121	RFKRSB555E-K	CHASSIS ASS'Y	
122	XTN26+7J	SCREW	
123	MMN-6F4RA88	REEL MOTOR	
124	XTN26+26F	SCREW	
125	RMA0048A	FLYWHEEL PLATE	
126	XTN2+3F	SCREW	
127	XSN26+3	SCREW	
128	RMR0141	THRUST BEARING	
129	RXG0009	GEAR ASS'Y	
130	RDG0034	REEL MOTOR GEAR	
131	RUB428Z	MOVING IRON CORE	
132	RSJ0003	SOLENOID	
133	RXQ0011	BRAKE SOLENOID	

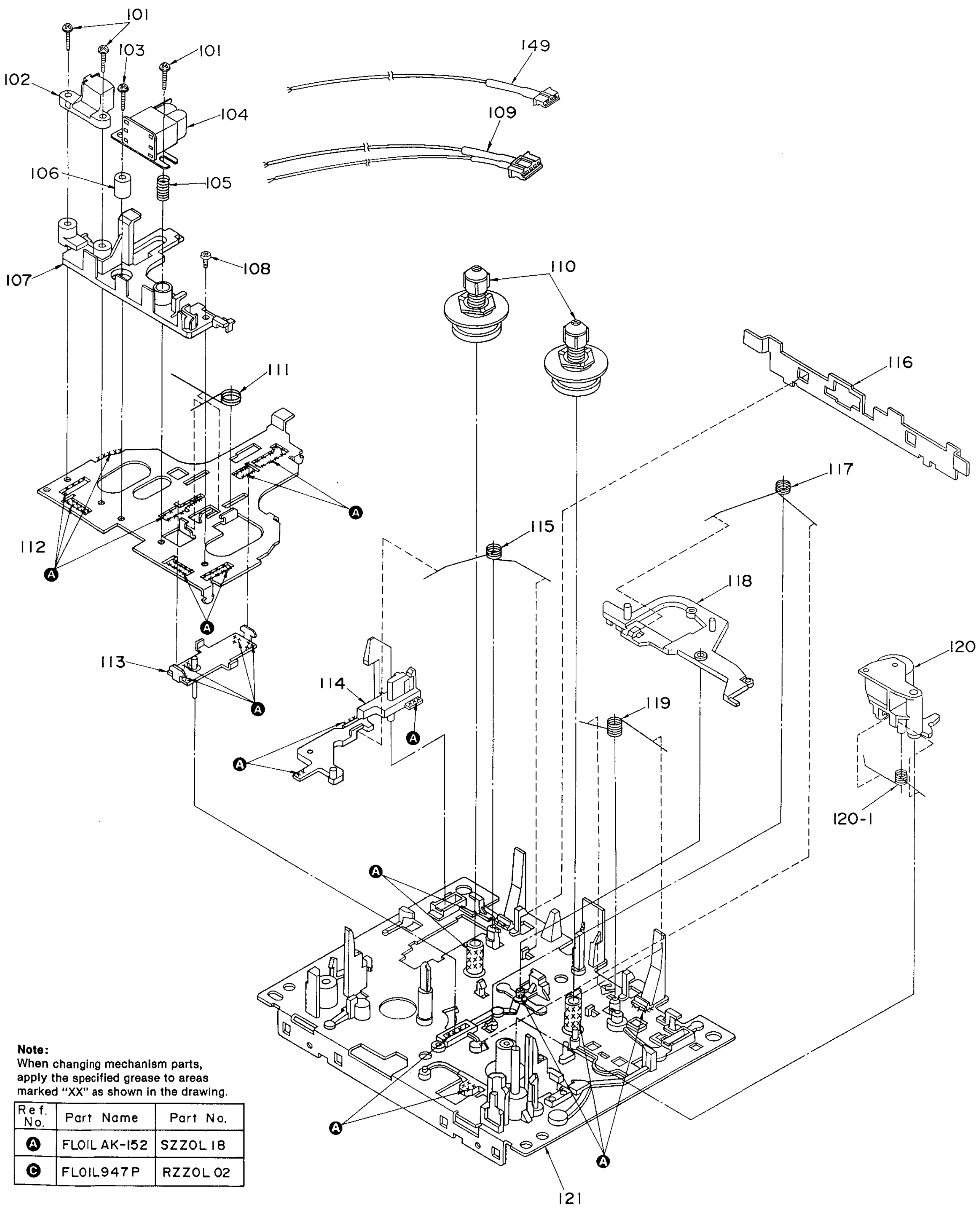
Ref. No.	Part No.	Part Name & Description	Remarks
134	XTW2+8S	SCREW	
135	XTN26+4F	SCREW	
136	RDG0030	MAIN GEAR	
137	RXF0008	FLYWHEEL	
137-1	RNW139ZA	WASHER	
138	RML0037	LEVER	
139	RUW147ZA	SPRING	
140	RJS2T7ZA	CONNECTOR(2P)	
141	RMQ0037	FG YOKE	
142	RXG0003	REEL TABLE GEAR	
143	RUQ112ZA	SPRING	
144	RUS609Z	TAPE PRESSURE SPRING	
145	RUQ111ZA	SPRING	
146	RHE5204ZA	SCREW	
147	RJS11T7ZA	CONNECTOR(11P)	
148	REP0268A	STATER P.C.B. ASS'Y	
149	REX0093	LEAD WIRE BLOCK	

Ref. No.	Part No.	Part Name & Description	Remarks
D903-909	MA165TA	DIODE	
D910	MA4051M	DIODE	
D911, 912	MA165TA	DIODE	
D913	MA4056H	DIODE	
D914	MA4091MTA	DIODE	
D915, 916	MA165TA	DIODE	⚠
D920, 921	MA165TA	DIODE	
D924	MA165TA	DIODE	
D925	MA4075MTA	DIODE	
D927	MA4082MTA	DIODE	
D971, 972	1SS133	DIODE	
		VARIABLE RESISTOR(S)	
VR1	EWGU2A029A54	V. R, REC. LEVEL CONTROL	
VR2	EVJ02SF06G15	V. R, BALANCE CONTROL	
VR3, 4	EVNDXAA00B53	V. R, PLAYBACK GAIN ADJ.	
VR5, 6	EVNDXAA00B14	V. R, OVERALL GAIN ADJ.	
VR7, 8	EVJ02KF04B24	V. R, REC. CALIBRATION	
VR301, 302	EVNDXAA00B14	V. R, OVERALL FREQ. ADJ.	
VR303	EVJ02VF04B53	V. R, BIAS CURRENT ADJ.	
VR701	EVU57A043A14	V. R, HEADPHONES CONTROL	
		COIL(S)	
L1, 2	RLZ0003	COIL	
L3-6	SLQX272-1YT	COIL	
L301	SL09B4-K	COIL	
L302, 303	SL09B1-K	COIL	
L403, 404	SLM1B8-K	COIL	
L405, 406	QLM9Z10K	COIL	
L407, 408	SLM1B8-K	COIL	
		TRANSFORMER(S)	
T601	RTP1K4B007-V	POWER TRANSFORMER	(EB)⚠
T601	RTP1K4E008-V	POWER TRANSFORMER	(E, E5, EG)⚠
T601	RTP1K4C004-V	POWER TRANSFORMER	(P, PC)⚠
		OSCILLATOR(S)	
X551	EF0GC4004T4	CERAMIC FILTER	
X901	EF0GC6004T4	CERAMIC FILTER	
		DISPLAY TUBE	
FL551	RSL0032-F	DISPLAY TUBE	
		SWITCH(ES)	
S551	EVQQTG05R	SW, MONITOR	
S701	EVQQTG05R	SW, STOP	

Ref. No.	Part No.	Part Name & Description	Remarks
S702	EVQQTG05R	SW, F. F.	
S703	EVQQTG05R	SW, REW	
S704	EVQQTG05R	SW, PLAY	
S705	EVQQTG05R	SW, REC	
S706	EVQQTG05R	SW, PAUSE	
S707	EVQQTG05R	SW, DOLBY NR C	
S708	EVQQTG05R	SW, DOLBY NR B	
S709	EVQQTG05R	SW, MPX	
S710	SSS166	SW, TIMER	
S711	EVQQTG05R	SW, COUNTER (RESET)	
S712	EVQQTG05R	SW, COUNTER (MODE)	
S713	EVQQTG05R	SW, METER RANGE	
S714	EVQQTG05R	SW, MEMORY (REPEAT)	
S715	EVQQTG05R	SW, MEMORY (STOP)	
S716	EVQQTG05R	SW, APRS	
S717	EVQQTG05R	SW, ARM	
S718	SSH1238	SW, POWER	
S719	EVQQTG05R	SW, OPEN/CLOSE	
S801	SSPD18	SW, MOTOR	
S802	SSPD18	SW, OPEN	
S971	RSH1A89Z	SW, MODE	
S972	RSH1A90Z	SW, HALF	
S973	RSH1A90Z	SW, ATS	
S975	RSH1A90Z	SW, REC	
S976	RSH1A90Z	SW, ATS	
		CONNECTOR(S) AND SOCKET(S)	
CN3	SJSD1105	CONNECTOR (11P)	
CN4	RJS1A1703	CONNECTOR (3P)	
CN5	RJU003K010M	SOCKET (10P)	
CN6A, 6B	RJS1A1705	CONNECTOR (5P)	
CN7-9	RJU003K010M	SOCKET (10P)	
CN10	SJT30545JQ	CONNECTOR (5P)	
CN10A	RJS1A1705	CONNECTOR (5P)	
CN11	SJT30345JQ	CONNECTOR (3P)	
CN201	RJS1A1703	CONNECTOR (3P)	
CN201A	RJS2T4ZA	CONNECTOR (2P)	
CN601, 602	RJS1A1101	SOCKET (1P)	
CN607-612	RJS1A1101	SOCKET (1P)	
CP1	SJTD313	CONNECTOR (3P)	
CP2	SJTD513	CONNECTOR (5P)	
CP5	RJT003K010	CONNECTOR (10P)	
CP7-9	RJT003K010	CONNECTOR (10P)	
CP10	SJS50578JQ	SOCKET (5P)	
CP11	SJS50378JQ	SOCKET (3P)	
		GND PART(S)	
E1, 2	SNE1004-1	GND PLATE	
E3	SUSD165	GND SPRING	

EXPLODED VIEWS

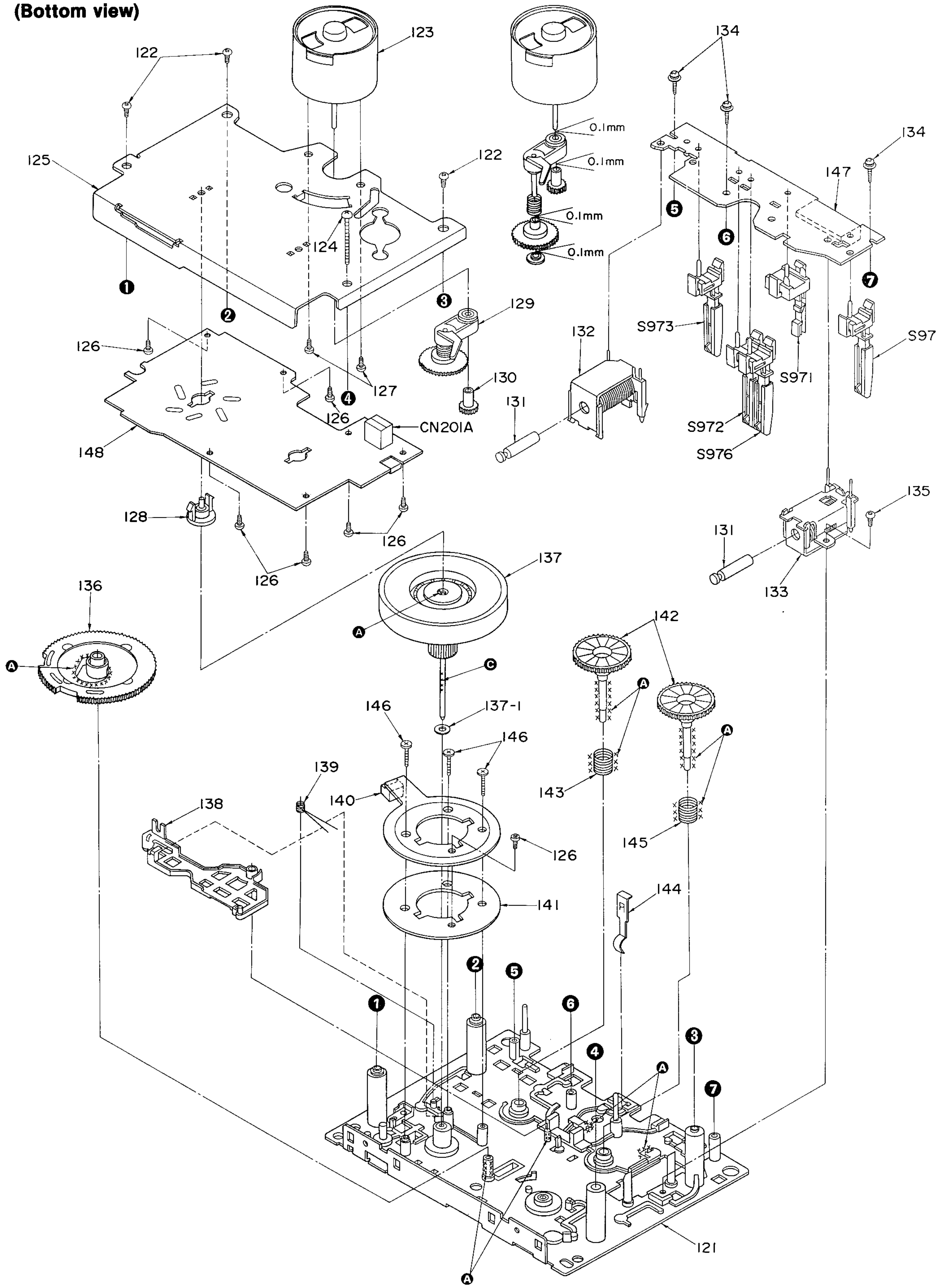
• Mechanical parts
(Top view)


101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
120-1
121
149
A

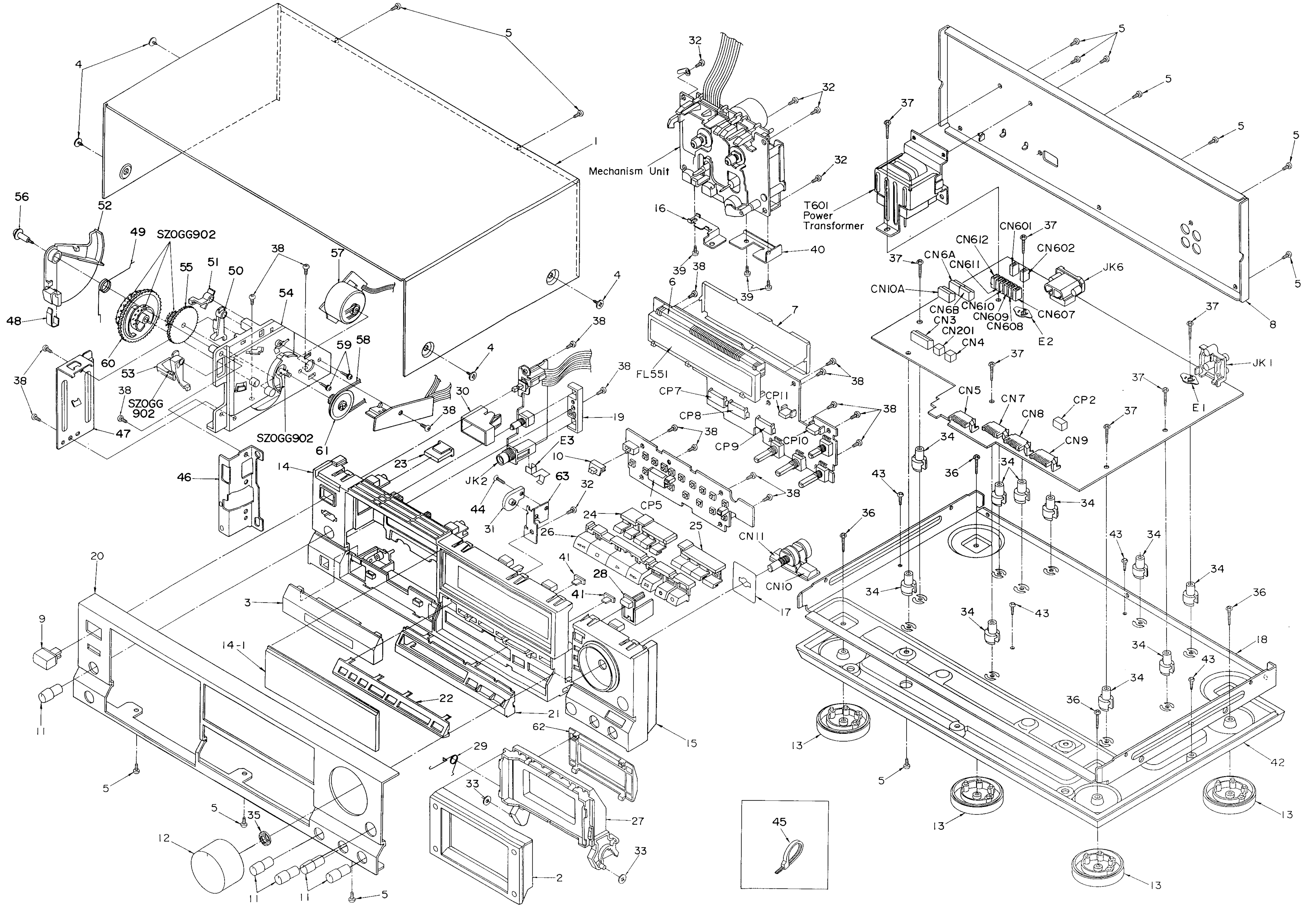
Note:
When changing mechanism parts, apply the specified grease to areas marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
A	FL0IL AK-152	SZZ0L18
C	FL0IL947P	RZZ0L02

(Bottom view)


122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
137-1
138
139
140
141
142
143
144
145
146
147
148
CN201A
S971
S972
S973
S975
S976
0.1mm
❶
❷
❸
❹
❺
❻
❼
A
C

• Cabinet parts


4
5
1
56
52
49
SZOGG902
55
51
50
38
57
54
48
60
53
38
SZOGG
902
47
59
58
61
SZOGG902
46
14
23
30
38
19
JK2
E3
44
31
63
32
10
Mechanism Unit
16
40
39
6
7
FL551
CP7
CP8
CP11
CP9
CP10
CP5
24
25
26
CN11
CN10
17
41
28
3
14-1
22
21
15
20
9
11
12
35
29
62
33
27
2
45
T601
Power
Transformer
37
CN601
CN602
CN612
CN6A
CN611
CN10A
CN6B
CN610
CN609
CN608
CN607
CN3
CN201
CN4
E2
JK6
JK1
E1
CN5
CN7
CN8
CP2
CN9
34
36
43
8
18
42
13

REPLACEMENT PARTS LIST

Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RKM0036-K	CABINET	
2	RYF0036	CASSETTE LID	
3	RYQ0027	ORNAMENT	
4	SNE2129-1	SCREW	
5	XTBS3+8JFZ1	SCREW	
6	RMN0021	FL HOLDER	
7	RSC0048	SHIELD PLATE	
8	RGR0024-H	REAR PANEL	(E)
8	RGR0024-I	REAR PANEL	(E5)
8	RGR0024-J	REAR PANEL	(EB)
8	RGR0024-K	REAR PANEL	(P, PC)
8	RGR0024-0	REAR PANEL	(EG)
9	RGU0030	BUTTON, POWER	
10	RGV0022	KNOB, TIMER	
11	RGW0032	KNOB, BALANCE LEVEL	
12	RGW0033	KNOB, REC LEVEL	
13	RKA0009-1	FOOT	
14	RFKNSB755EAK	FRONT GRILLE ASS'Y(1)	
14-1	RKW0038	TRANSPARENT PLATE	
15	RFKNSB755EBK	FRONT GRILLE ASS'Y(2)	
16	RMC0040	BRACKET	
17	RMC0056	SHIELD PLATE	
18	RMK0026-1	CHASSIS	
19	RMN0022	ORNAMENT	
20	RFKGSB755E-K	FRONT PANEL ASS'Y	(E, E5, EB, EG)
20	RFKGSB755P-K	FRONT PANEL ASS'Y	(P, PC)
21	RGK0117	ORNAMENT, BUTTON(A)	
22	RGK0118	ORNAMENT, BUTTON(B)	
23	RGU0195	BUTTON, OPEN/CLOSE	
24	RGU0131	BUTTON, COUNTER	
25	RGU0132	BUTTON, NOISE REDUCTION	
26	RGU0133	BUTTON, OPERATION	
27	RFKNSB755ECK	CASSETTE HOLDER ASS'Y	
28	RGU0194	BUTTON, MONITOR	
29	RME0049	SPRING	
30	RMR0185	LEVER, OPEN/CLOSE	
31	SMQSX911-KE	DAMPER GEAR ASS'Y	
32	XTB3+10JFZ	SCREW	
33	SUD444-1	WASHER	
34	SHE187-2	HOLDER	
35	SNE4021-1	NUT	
36	XTB3+16G	SCREW	
37	XTB3+20J	SCREW	
38	XTB3+8JFZ	SCREW	

Ref. No.	Part No.	Part Name & Description	Remarks
39	XTB26+4FFZ	SCREW	
40	RSC0076	SHIELD PLATE	
41	RGL0030	PANEL LIGHT	
42	RKU0009	BOTTOM BOARD	
43	XTB3+10GFZ	SCREW	
44	XTS3+8J	SCREW	
45	SHR301	CLAMPER	
46	RMA0146	LOADING ANGLE	
47	RMA0242	ANGLE	
48	RMC0039	BRACKET	
49	RME0039	OPEN SPRING	
50	RML0110	LEAF SWITCH LEVER (B)	
51	RML0111	LEAF SWITCH LEVER (C)	
52	RML0112	DRIVE SECTOR LEVER	
53	RML0113	LEAF SWITCH LEVER (A)	
54	RFKNSB755EDK	LOADING BASE ASS'Y	
55	SFUGF01N02	INTERMEDIATE GEAR	
56	SHDD8	SCREW	
57	RFKPSB755E-K	EJECT DRIVE MOTOR ASS'Y	
58	SMBD7	BELT	
59	XYN26+F6	SCREW	
60	RDG0080	DRIVE GEAR	
61	RDG0081	PULLEY GEAR	
62	RMQ0072	HALF STABILIZER	
63	RMA0157	DAMPER ANGLE	
		PACKING MATERIAL	
P1	RPG0301	CARTON BOX	(PC, E, E5, EB, EG)
P1	RPG0302	CARTON BOX	(P)
P2	RPN0178	PAD, FRONT/BACK	
P3	SPS5185	PAD, ACCESSORIES	
P4	SPP756	PROTECTION COVER	
		ACCESSORIES	
A1	RQT0224-P	INSTRUCTION MANUAL	(P)
A1	RFKSSB755PC	INSTRUCTION MANUAL	(PC)
A1	RQT0226-D	INSTRUCTION MANUAL	(EG)
A1	RQT0227-B	INSTRUCTION MANUAL	(EB)
A1	RFKSSB755E	INSTRUCTION MANUAL	(E, E5)
A2	SFDAC05E03	POWER CORD	(E, E5, EG) ⚠
A2	SJA172	POWER CORD	(PC) ⚠
A2	SJA172-1	POWER CORD	(P) ⚠
A2	SJA193-1	POWER CORD	(EB) ⚠
A3	SJP2249-3	STEREO CONNECTION CABLE	

RESISTORS & CAPACITORS

Notes : • Capacity valuse are in microfarads (uF) unless specified otherwise, P=Pico-farads(pF) F=Farads(F)
• Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R9, 10	ERDS2TJ683T	1/4W 68K
R11, 12	ERDS2TJ183T	1/4W 18K
R13, 14	ERDS2TJ101T	1/4W 100
R15, 16	ERDS2TJ220T	1/4W 22
R17, 18	ERDS2TJ153T	1/4W 15K
R19, 20	ERDS2TJ103T	1/4W 10K
R21, 22	ERDS2TJ564T	1/4W 560K
R23, 24	ERDS2TJ682T	1/4W 6.8K
R25, 26	ERDS2TJ273T	1/4W 27K
R27, 28	ERDS2TJ153T	1/4W 15K
R29, 30	ERDS2TJ682T	1/4W 6.8K
R31, 32	ERDS2TJ392T	1/4W 3.9K
R33, 34	ERDS2TJ102T	1/4W 1K
R35, 36	ERDS2TJ820T	1/4W 82
R37, 38	ERDS2TJ102T	1/4W 1K
R39, 40	ERDS2TJ151T	1/4W 150
R41, 42	ERDS2TJ332T	1/4W 3.3K
R43, 44	ERDS2TJ392T	1/4W 3.9K
R45, 46	ERDS2TJ472T	1/4W 4.7K
R47, 48	ERDS2TJ222T	1/4W 2.2K
R49, 50	ERDS2TJ104T	1/4W 100K
R51-56	ERDS2TJ223T	1/4W 22K
R59, 60	ERDS2TJ182T	1/4W 1.8K
R61, 62	ERDS2TJ222T	1/4W 2.2K
R63, 64	ERDS2TJ332T	1/4W 3.3K
R67, 68	ERDS2TJ273T	1/4W 27K
R69, 70	ERDS2TJ472T	1/4W 4.7K
R71, 72	ERDS2TJ561T	1/4W 560
R73-76	ERDS2TJ103T	1/4W 10K
R77, 78	ERDS2TJ331	1/4W 330
R79, 80	ERDS2TJ182T	1/4W 1.8K
R201	ERJ6GEYJ333V	1/10W 33K
R202	ERJ6GEYJ683V	1/10W 68K
R203-205	ERJ6GEYJ1R5V	1/10W 1.5
R206	ERJ8GEYJ222V	1/8W 2.2K
R207	ERJ6GEYJ182V	1/10W 1.8K
R208	ERJ6GEYJ222V	1/10W 2.2K
R209-211	ERJ6GEYJ4R7V	1/10W 4.7
R212, 213	ERJ6GEYJ152V	1/10W 1.5K
R214	ERJ6GEYJ822V	1/10W 8.2K
R215	ERJ6GEYJ101V	1/10W 100
R216	ERJ8GEYJ222V	1/8W 2.2K
R301	ERDS2TJ1R0T	1/4W 1.0
R302, 303	ERDS2TJ183T	1/4W 18K
R304, 305	ERDS2TJ100T	1/4W 10
R306	ERDS2TJ471T	1/4W 470

Ref. No.	Part No.	Values & Remarks
R307	ERDS2TJ222T	1/4W 2.2K
R308	ERDS2TJ682T	1/4W 6.8K
R311, 312	ERDS2TJ100T	1/4W 10
R313, 314	ERDS2TJ154T	1/4W 150K
R315, 316	ERDS2TJ333T	1/4W 33K
R317	ERDS2TJ822T	1/4W 8.2K
R318	ERDS2TJ272T	1/4W 2.7K
R319	ERDS2TJ102T	1/4W 1K
R320	ERDS2TJ332T	1/4W 3.3K
R321	ERDS1FJ390	1/2W 39 (EB)
R321	ERDS1FVJ121T	1/2W 120 (P, PC, E,
		E5, EG)
R322, 323	ERDS1FJ390	1/2W 39 (EB)
R324	ERDS2TJ102T	1/4W 1K
R325	ERDS2TJ222T	1/4W 2.2K
R405, 406	ERDS2TJ473T	1/4W 47K
R415, 416	ERDS2TJ102T	1/4W 1K
R417, 418	ERDS2TJ332T	1/4W 3.3K
R419, 420	ERDS2TJ333T	1/4W 33K
R421-424	ERDS2TJ823T	1/4W 82K
R425, 426	ERDS2TJ683T	1/4W 68K
R427, 428	ERDS2TJ222T	1/4W 2.2K
R429, 430	ERDS2TJ512	1/4W 5.1K
R435, 436	ERDS2TJ473T	1/4W 47K
R437, 438	ERDS2TJ242	1/4W 2.4K
R439-442	ERDS2TJ684T	1/4W 680K
R443, 444	ERDS2TJ562T	1/4W 5.6K
R445, 446	ERDS2TJ102T	1/4W 1K
R447, 448	ERDS2TJ332T	1/4W 3.3K
R449, 450	ERDS2TJ333T	1/4W 33K
R451-454	ERDS2TJ823T	1/4W 82K
R455, 456	ERDS2TJ683T	1/4W 68K
R457, 458	ERDS2TJ222T	1/4W 2.2K
R459, 460	ERDS2TJ512	1/4W 5.1K
R551, 552	ERDS2TJ104T	1/4W 100K
R553, 554	ERDS2TJ563T	1/4W 56K
R555, 556	ERDS2TJ823T	1/4W 82K
R557, 558	ERDS2TJ220T	1/4W 22
R559, 560	ERDS2TJ152T	1/4W 1.5K
R561	ERDS2TJ102T	1/4W 1K
R562	ERDS2TJ471T	1/4W 470
R563, 564	ERDS2TJ103T	1/4W 10K
R565	ERDS2TJ105T	1/4W 1M
R569, 570	ERDS2TJ101T	1/4W 100
R571	ERDS2TJ152T	1/4W 1.5K
R572	ERDS2TJ102T	1/4W 1K
R573	ERDS2TJ270T	1/4W 27
R574	ERDS2TJ220T	1/4W 22
R575-578	ERDS2TJ331	1/4W 330

Ref. No.	Part No.	Values & Remarks
R601, 602	ERDS2TJ472T	1/4W 4.7K
R603	ERDS2TJ103T	1/4W 10K
R604	ERDS2TJ472T	1/4W 4.7K ⚠
R605	ERD2FCVJ6R8T	1/4W 6.8 (EB) ⚠
R605	ERDS1FVJ150T	1/2W 15 (P, PC, E,
		E5, EG) ⚠
R606	ERD2FCVJ4R7T	1/4W 4.7 (EB)
R606	ERDS1FJ4R7	1/2W 4.7 (P, PC, E,
		E5, EG)
R607, 608	ERDS2TJ561T	1/4W 560
R611, 612	ERD2FCVG270T	1/4W 27 (EB)
R611, 612	ERDS1FVJ270T	1/2W 27 (P, PC, E,
		E5, EG)
R613, 614	ERDS2TJ222T	1/4W 2.2K
R615	ERDS2TJ1R0T	1/4W 1.0 ⚠
R616	ERDS2TJ391T	1/4W 390 ⚠
R617, 618	ERDS2TJ151T	1/4W 150 (EB)
R617, 618	ERDS2TJ820T	1/4W 82 (P, PC, E,
		E5, EG)
R619, 620	ERQ16NKR15E	1/6W 0.15 (EB) ⚠
R623, 624	ERDS2TJ101T	1/4W 100 (EB)
R625	ERDS2TJ181T	1/4W 180 (EB)
R626, 627	ERDS2TJ101T	1/4W 100 (EB)
R628	ERDS2TJ103T	1/4W 10K
R629	ERDS2TJ472T	1/4W 4.7K
R630, 631	ERDS2TJ151T	1/4W 150 (EB)
R630, 631	ERDS2TJ820T	1/4W 82 (P, PC, E,
		E5, EG)
R632, 633	ERDS2TJ121T	1/4W 120
R635-638	ERDS2TJ181T	1/4W 180 (EB)
R639	ERD2FCVG100T	1/4W 10 (EB)
R640	ERD2FCVJ6R8T	1/4W 6.8 (EB) ⚠
R641	ERDS2TJ391T	1/4W 390
R642	ERDS2TJ391T	1/4W 390 ⚠
R701	ERDS2TJ821T	1/4W 820
R702	ERDS2TJ102T	1/4W 1K
R703	ERDS2TJ122T	1/4W 1.2K
R704	ERDS2TJ152T	1/4W 1.5K
R705	ERDS2TJ182T	1/4W 1.8K
R706	ERDS2TJ222T	1/4W 2.2K
R707	ERDS2TJ332T	1/4W 3.3K
R708	ERDS2TJ472T	1/4W 4.7K
R709	ERDS2TJ682T	1/4W 6.8K
R710	ERDS2TJ123T	1/4W 12K
R711	ERDS2TJ223T	1/4W 22K
R712	ERDS2TJ821T	1/4W 820
R713	ERDS2TJ102T	1/4W 1K
R714	ERDS2TJ122T	1/4W 1.2K
R715	ERDS2TJ152T	1/4W 1.5K

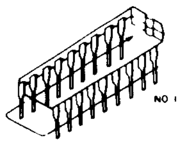
Ref. No.	Part No.	Values & Remarks
R716	ERDS2TJ182T	1/4W 1.8K
R717	ERDS2TJ181T	1/4W 180
R718	ERDS2TJ331	1/4W 330
R719, 720	ERDS2TJ180	1/4W 18
R721, 722	ERDS2TJ330T	1/4W 33
R723, 724	ERDS2TJ100T	1/4W 10
R725, 726	ERDS2TJ102T	1/4W 1K
R727, 728	ERDS2TJ332T	1/4W 3.3K
R801	ERDS2TJ332T	1/4W 3.3K (EB)
R802	ERDS2TJ222T	1/4W 2.3K (EB)
R803	ERDS1FVJ3R3T	1/2W 3.3
R804	ERDS2TJ101T	1/4W 100
R805	ERDS2TJ332T	1/4W 3.3K (EB)
R806	ERDS2TJ222T	1/4W 2.2K (EB)
R901	ERDS2TJ105T	1/4W 1M
R902	ERDS2TJ103T	1/4W 10K
R903	ERDS2TJ471T	1/4W 470
R904	ERDS2TJ103T	1/4W 10K
R905	ERDS2TJ182T	1/4W 1.8K
R906	ERDS2TJ682T	1/4W 6.8K
R907	ERDS2TJ103T	1/4W 10K
R908	ERDS2TJ392T	1/4W 3.9K
R909	ERDS2TJ272T	1/4W 2.7K
R910	ERDS2TJ333T	1/4W 33K
R911, 912	ERDS2TJ103T	1/4W 10K
R914	ERDS2TJ221T	1/4W 220
R915	ERDS2TJ103T	1/4W 10K
R916	ERDS2TJ332T	1/4W 3.3K
R917, 918	ERDS2TJ103T	1/4W 10K
R919, 920	ERDS2TJ223T	1/4W 22K
R922	ERDS2TJ472T	1/4W 4.7K
R923	ERDS2TJ152T	1/4W 1.5K
R924	ERDS2TJ223T	1/4W 22K ⚠
R925	ERDS2TJ821T	1/4W 820
R926	ERDS2TJ223T	1/4W 22K ⚠
R927	ERDS2TJ821T	1/4W 820
R928	ERG1SJ150E	1W 15 ⚠
R929	ERG1SJ180E	1W 18 ⚠
R930	ERDS2TJ223T	1/4W 22K ⚠
R931	ERDS2TJ821T	1/4W 820
R932	ERDS2TJ103T	1/4W 10K (P, PC, E,
		E5, EG)
R933	ERDS2TJ332T	1/4W 3.3K
R934	ERDS2TJ472T	1/4W 4.7K (EB)
R935	ERDS2TJ682T	1/4W 6.8K
R936	ERDS2TJ223T	1/4W 22K
R938	ERDS2TJ682T	1/4W 6.8K
R939	ERDS2TJ223T	1/4W 22K
R940, 941	ERDS2TJ562T	1/4W 5.6K
R942	ERDS2TJ821T	1/4W 820
R943	ERDS2TJ223T	1/4W 22K
R944, 945	ERDS1FVJ120T	1/2W 12

Ref. No.	Part No.	Values & Remarks
R946	ERDS2TJ102T	1/4W 1K
R947, 948	ERDS2TJ103T	1/4W 10K
R949	ERDS2TJ472T	1/4W 4.7K
R950	ERDS2TJ681T	1/4W 680
R951	ERDS2TJ101T	1/4W 100
R952	ERDS2TJ823T	1/4W 82K
R953	ERDS2TJ393T	1/4W 39K
R954	ERDS2TJ822T	1/4W 8.2K
R955	ERDS2TJ102T	1/4W 1K
R956	ERDS2TJ473T	1/4W 47K
R957	ERDS2TJ183T	1/4W 18K
R958	ERDS2TJ103T	1/4W 10K
R959	ERDS2TJ152T	1/4W 1.5K
R960	ERDS2TJ472T	1/4W 4.7K
R962	ERDS2TJ153T	1/4W 15K
R963	ERDS2TJ273T	1/4W 27K
R964	ERDS2TJ472T	1/4W 4.7K
R970	ERDS2TJ222T	1/4W 2.2K
R971	ERDS2TJ332T	1/4W 3.3K
R971A	ERDS2TJ271T	1/4W 270
R971B	ERDS1FVJ3R3T	1/2W 3.3 ⚠
R972	ERDS2TJ472T	1/4W 4.7K
R972A	ERDS2TJ183T	1/4W 18K
R973	ERDS2TJ682T	1/4W 6.8K
R973A	ERDS2TJ271T	1/4W 270
R974	ERDS2TJ123T	1/4W 12K
R974A	ERDS2TJ183T	1/4W 18K
R975	ERDS2TJ223T	1/4W 22K
R977	ERDS2TJ223T	1/4W 22K
R978	ERDS2TJ473T	1/4W 47K
R979	ERDS2TJ102T	1/4W 1K
R980	ERDS2TJ472T	1/4W 4.7K
R981	ERDS2TJ392T	1/4W 3.9K
R983	ERDS2TJ222T	1/4W 2.2K
R984	ERDS2TJ472T	1/4W 4.7K (EB)
R985	ERDS2TJ102T	1/4W 1K ⚠
R986	ERDS2TJ472T	1/4W 4.7K
R987	ERDS2TJ223T	1/4W 22K
R988, 989	ERDS2TJ103T	1/4W 10K
R990	ERDS2TJ472T	1/4W 4.7K
R992, 993	ERDS2TJ822T	1/4W 8.2K
R994, 995	ERDS2TJ473T	1/4W 47K
R998	ERDS2TJ103T	1/4W 10K
R999	ERD2FCVG330T	1/4W 33 (EB) ⚠
R999	ERDS1FVJ330T	1/2W 33 (P, PC, E,
		E5, EG) ⚠
		CAPACITORS
C7, 8	ECBT1H221KBY	50V 220P
C9, 10	ECEA0JPX471B	6.3V 470U
C11, 12	ECQB1H562JZ3	50V 5600P

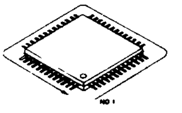
Ref. No.	Part No.	Values & Remarks
C15, 16	ECCD1H221KB	50V 220P
C17, 18	ECQB1H562JZ3	50V 5600P
C19, 20	ECEA1HKR33B	50V 0.33U
C21, 22	ECEA1CPX100B	16V 10U
C23, 24	ECQB1H183JZ3	50V 0.018U
C25, 26	ECQB1H822JZ3	50V 8200P
C27, 28	ECQB1H562JZ3	50V 5600P
C29, 30	ECQB1H183JZ3	50V 0.018U
C31, 32	ECQV1H683JZ3	50V 0.068U
C33, 34	ECBT1H101KB5	50V 100P
C35, 36	ECEA1HPX4R7B	50V 4.7U
C37, 38	ECQP1121JZ	100V 120P
C39, 40	ECKD1H152KB	50V 1500P
C41, 42	ECBT1H470J5	50V 47P
C43, 44	ECEA1CPX100B	16V 10U
C45, 46	ECEA1HPX4R7B	25V 4.7U
C47, 48	ECEA1HPS010	50V 1U
C49, 50	ECEA1CPX100B	16V 10U
C51, 52	ECKR1H103ZF5	50V 0.01U
C53, 54	ECQB1H122JZ3	50V 1200P
C55, 56	ECQB1H123JZ	50V 0.012U
C57, 58	ECQB1H333JZ3	50V 0.033U
C59, 60	ECQB1H223JZ3	50V 0.022U
C201	ECUV1E153MB	25V 0.015U
C202	ECUV1E104KB	25V 0.1U
C203, 204	ECEV1CA100R	16V 10U
C205, 206	ECUV1E104KB	25V 0.1U
C209-211	ECEV1EN4R7R	25V 4.7U
C212-214	ECUV1H103ZFN	50V 0.01U
C215	ECUV1H472KB	50V 4700P
C216	ECUV1E562KBN	25V 5600P
C217-219	ECUV1E104KB	25V 0.1U
C301	ECQP1153JZ	50V 0.015U
C302	ECEA1EK4R7B	25V 4.7U
C303	ECKD1H392KB	50V 3900P
C304, 305	ECKR1H222KB5	50V 2200P
C306	ECKD1H682KB	50V 6800P
C310	ECKR1H103ZF5	50V 0.01U (EB)
C310	ECKD1H472KB	50V 4700P (P, PC, E,
		E5, EG)
C311	ECEA1AU101B	10V 100U
C312	ECBT1E103ZF	25V 0.01U
C313, 314	ECQV1H224JZ3	50V 0.22U
C315, 316	ECBT1H821KB5	50V 820P
C317, 318	ECBT1H121KB5	50V 120P
C319, 320	ECQV1H563JZ3	50V 0.056U
C321, 322	ECQB1H223JZ3	50V 0.022U
C323, 324	ECQB1H103JZ3	50V 0.01U
C325, 326	ECKR1H561KB5	50V 560P
C328	ECBT1H470J5	50V 47P
C329	ECEA1EK100B	25V 10U
C330	ECBT1E103ZF	25V 0.01U

Ref. No.	Part No.	Values & Remarks
C331	ECBT1E103ZF	25V 0.01U (EB)
C332	ECBT1E103ZF	25V 0.01U
C333	ECBT1H470J5	50V 47P
C403, 404	ECEA1CPX100B	16V 10U
C409, 410	ECQB1H472JZ3	50V 4700P
C411, 412	ECEA1CPX100B	16V 10U
C413, 414	ECQV1H473JZ3	50V 0.047U
C415, 416	ECQV1H224JZ3	50V 0.22U
C417-420	ECEA1HKR68B	50V 0.68U
C421, 422	ECQV1H224JZ3	50V 0.22U
C423, 424	ECQV1H473JZ3	50V 0.047U
C425, 426	ECEA1CPX100B	16V 10U
C427, 428	ECQB1H472JZ3	50V 4700P
C429, 430	ECQB1H103JZ3	50V 0.01U
C433, 434	ECKD1H122KB	50V 1200P
C435, 436	ECKD1H152KB	50V 1500P
C437, 438	ECQB1H472JZ3	50V 4700P
C439, 440	ECEA1CPX100B	16V 10U
C441, 442	ECQV1H473JZ3	50V 0.047U
C443, 444	ECQV1H224JZ3	50V 0.22U
C445-448	ECEA1HKR68B	50V 0.68U
C449, 450	ECQV1H224JZ3	50V 0.22U
C451, 452	ECQV1H473JZ3	50V 0.047U
C453, 454	ECEA1CPX100B	16V 10U
C455, 456	ECQB1H472JZ3	50V 4700P
C457, 458	ECQB1H103JZ3	50V 0.01U
C461, 462	ECEA1HPX4R7B	50V 4.7U
C551, 552	ECQV1H104JZ3	50V 0.1U
C553, 554	ECEA0JKS101B	6.3V 100U
C555	ECBT1E103ZF	25V 0.01U
C556	ECEA1CK100B	16V 10U
C557	ECEA1EK4R7B	25V 4.7U
C558	ECEA1HK010B	50V 1U
C559-561	ECBT1E103ZF	25V 0.01U
C563, 564	ECEA0JKS101B	6.3V 100U
C567, 568	ECEA1VK100B	35V 10U
C601	ECKD2H682PE	500V 6800P ⚠
C602	ECEA1EU222E	25V 2200U
C603	ECEA1EU222E	25V 2200U ⚠
C604, 605	ECKR1H103ZF5	50V 0.01U
C606, 607	ECEA1AU221B	10V 220U
C608, 609	ECKR1H103ZF5	50V 0.01U
C610, 611	ECEA1AU102B	10V 1000U
C612	ECEA1EU222E	25V 2200U ⚠
C613	ECKR1H103ZF5	50V 0.01U
C615	ECEA1EK100B	25V 10U
C617	ECEA1HU221B	50V 220U
C618-621	ECEA1AU102B	10V 1000U
C623	ECBT1E103ZF	25V 0.01U
C624	ECKD2H682PE	500V 6800P
C626	ECKR1H103ZF5	50V 0.01U
C627	ECBT1E103ZF	25V 0.01U ⚠
C628, 629	ECEA1HPS010	50V 1U
C701	ECKR1H223ZF5	50V 0.022U
C702, 703	ECKR1H103ZF5	50V 0.01U
C901	ECEA0JU222B	6.3V 2200U
C902	ECKR1H103ZF5	50V 0.01U
C903	ECEA1HK010B	50V 1U
C904	ECEA1EK4R7B	25V 4.7U
C905	ECKR1H103ZF5	50V 0.01U
C906	ECEA1CN100SB	16V 10U
C908	ECKR1H103ZF5	50V 0.01U
C909	ECQB1H822JZ3	50V 8200P
C910	ECEA1CK100B	16V 10U
C911	ECBT1H470J5	50V 47P
C912	ECEA1HK010B	50V 1U
C914	ECEA1CK100B	16V 10U
C915	ECEA0JU101B	6.3V 100U
C916	ECEA1CN100SB	16V 10U
C917	ECEA1HK010B	50V 1U (EB)
C918, 919	ECBT1E103ZF	25V 0.01U
C920	ECEA1HKR47B	50V 0.47U
C921	ECEA1EK100B	25V 10U

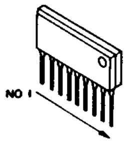
TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



MC14066BCP	14 Pin
UPC1297CA	18 Pin
TEA0665	28 Pin
AN7351K	42 Pin
HD404302SA07	42 Pin
MB88511-224N	42 Pin

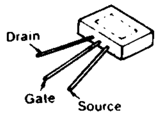


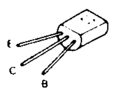
HA13440MPEL	30 Pin



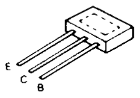
M5218L	8 Pin
BA6218	9 Pin

2SJ164PQRTA



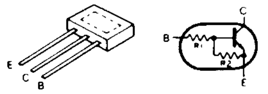


2SB621ARSTA
2SD592A·

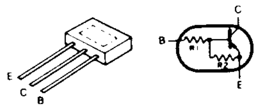


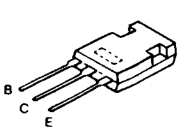
2SA1309AQSTA
2SC3311AQSTA
2SD1450RSTTA
2SB1030RSTTA

DTC114ESTP
DTC114YSTP

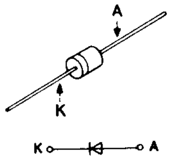


DTA114ESTP

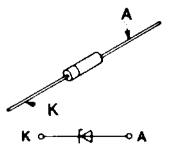




2SB1357DEFTA
2SD2037EFTA



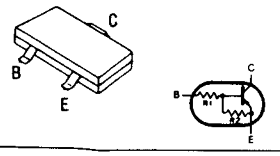
MA165TA
1SR35200TB
1SS133



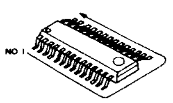
MA4051MTA
MA4056H
MA4062HTA
MA4075MTA
MA4082MTA

MA4091MTA
MA4120M
MA4200M
MA4220
MA4330MTA

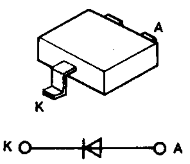
2SD601RTW



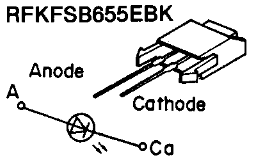
SN74LS04MEL	14 Pin
SN74LS74AMEL	14 Pin



MA3056MTW



RFKFSB655EAK
RFKFSB655EBK



Printed in Japan
H890812000 YY/TN